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(NEW YORK), 1651

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VOICE OF THE PRESS

ON THE

New York Arcade Railway

115 BROADWAY.

1886.

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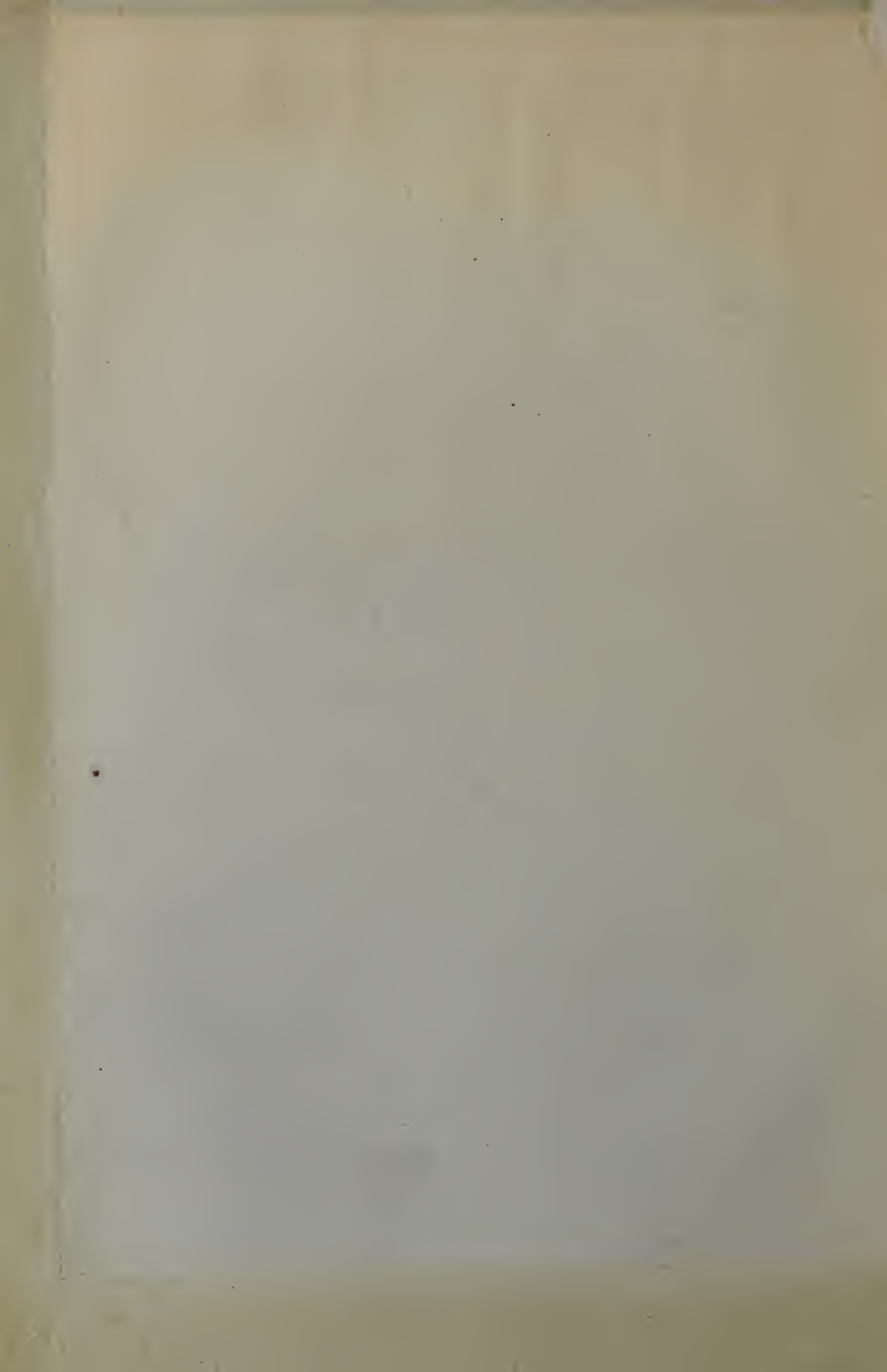
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NEW YORK ARCADE RAILWAY. MELVILLE C. SMITH, Projector.

(View up Broadway, from Pine Street.)

ORIGINAL PLAN, INCLUDING SIDEWALKS, 1868.



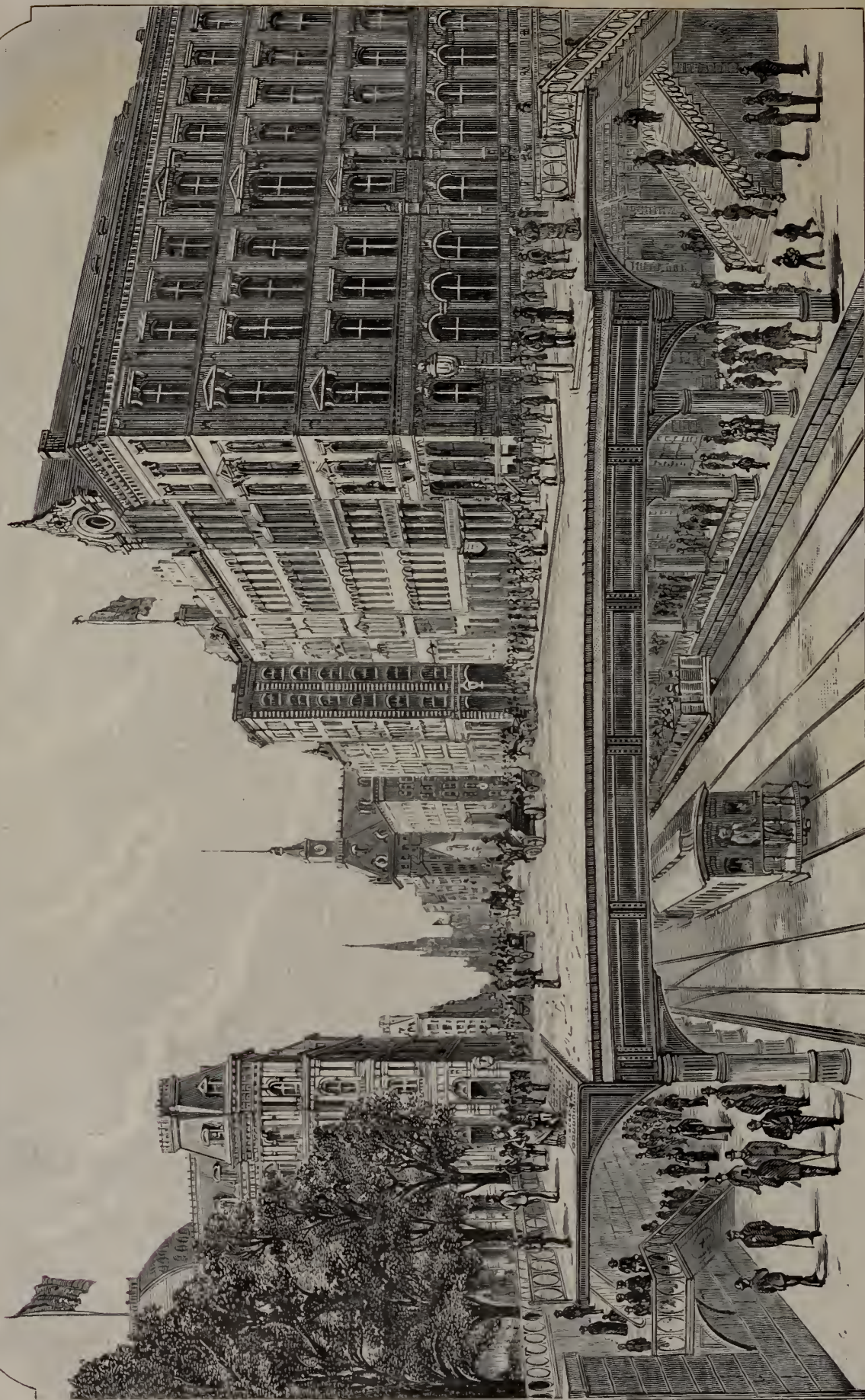
VOICE OF THE PRESS

ON THE

New York Arcade Railway

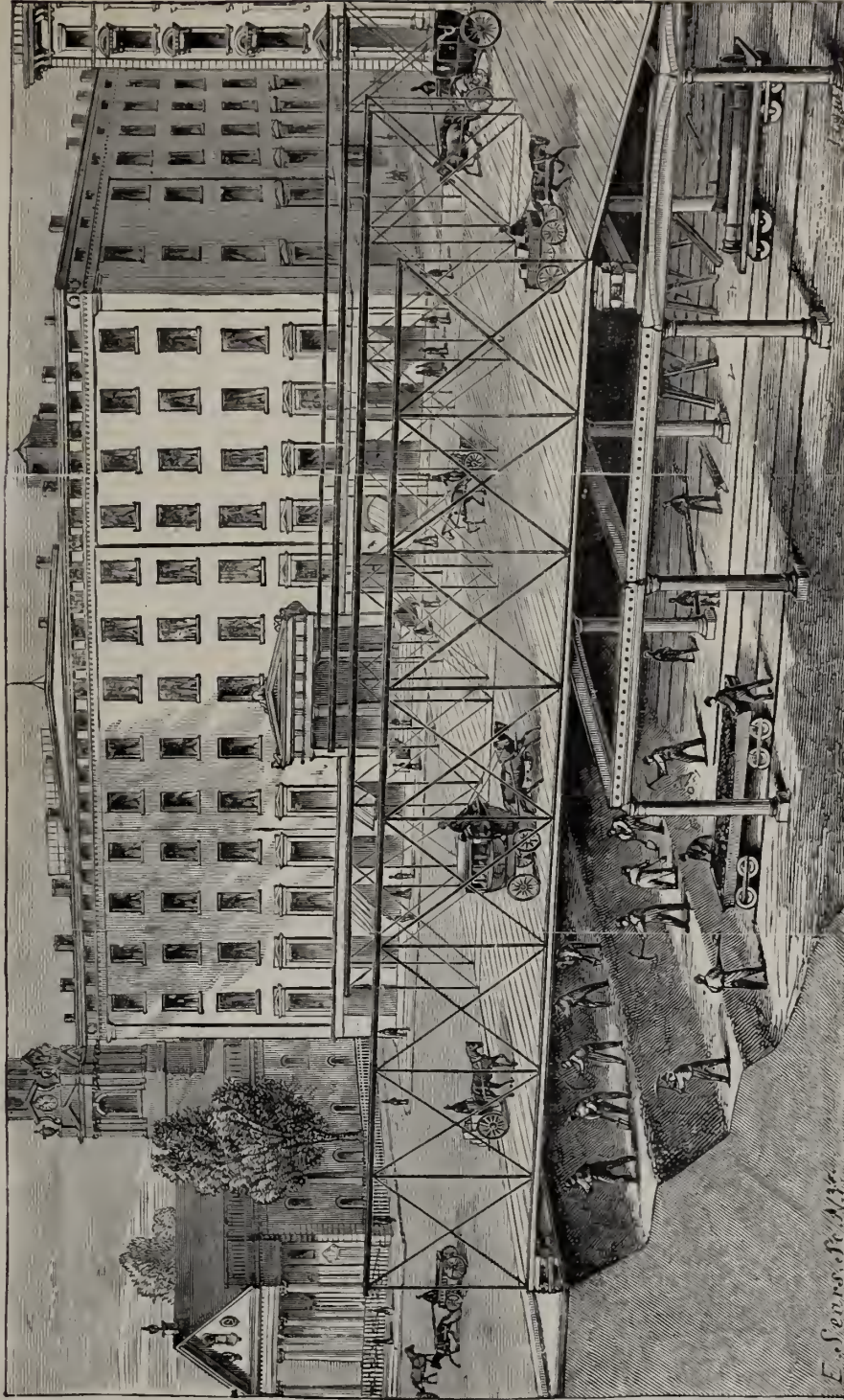
115 BROADWAY.

1886.



ARCADE RAILWAY-WAY STATION.

Picture also represents the appearance of a continuous Arcade if constructed from building to building. Page 43 represents the Arcade extending only to the curb lines.



PLAN FOR BUILDING THE ARCADE WITHOUT INTERRUPTION TO TRAVEL.

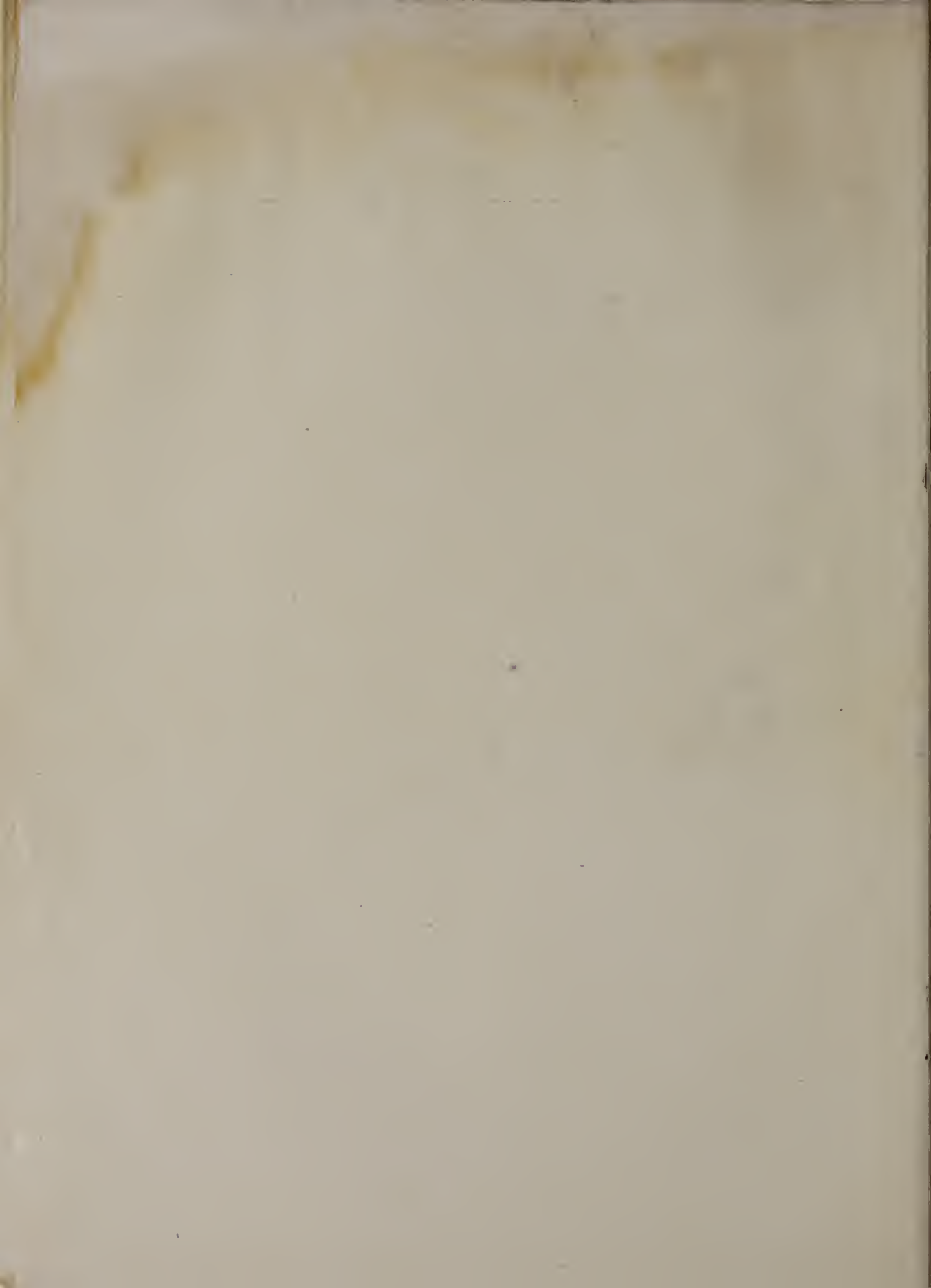
The work on the Arcade will be commenced by placing along the line of the roadway two iron bridges, of from 500 to 1000 feet in length, and each 18 feet wide in the clear, and along the line of sidewalks corresponding bridges, each about 12 feet wide. These bridges to be supported at intermediate points.

The floor of these bridges will be elevated four feet above the grade of the street, and the difference in elevation overcome by a gentle ascent at each end.

The skeleton frame trusses will form but slight obstruction to the view, and permit pedestrians to cross the streets at all places. The panels are made separate and bolted

together, and may be taken down from one end and added to the other with facility. Convenient access to and from the bridges will be provided, and the work on the roadway will be carried on under the bridge, without using the street, either in the removal of excavations or in bringing materials to construct the road: the completed Arcade being ample for these uses, and affording abundant store-room for all purposes of construction.

The street in front of an ordinary building would be occupied by the bridges and workmen about one month, and during this time (by the plan proposed) the occupants of the building would suffer but little inconvenience, and the street travel little, if any, obstruction.



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NEW YORK ARCADE RAILWAY COMPANY.

ITS PURPOSE.

The purpose of the Arcade Railway Company is to construct a four-track underground railroad for the carrying of passengers and freight—both through and way.

ITS PLAN.

The plan of the Company is to build such road under Broadway and Madison Avenue for which it holds a special grant; and it seeks to build it of such width as to accommodate the widest cars, while its road will have the requisites of good light and pure air.

THE ADVANTAGES OF THE ARCADE ROAD.

It has the best route and the best plan.

It provides a capacious gallery for all water mains, pipes, wires, &c.

It is the only proposed road which has ever received the unqualified endorsement of the great engineers of the country.

It will meet the wants of the people, and is in their interests.

It will take no property in use for any other purpose, and will injure no individual.

It will connect the city of New York more closely with every section of the country, by affording a through route for passengers and freight without change of cars or breaking of bulk.

It will afford REAL rapid transit, which neither fogs nor storms can hinder or delay.

It will be the only artistic, permanent, comprehensive, and unobjectionable underground road.

It is the only underground road which can be built and fully meet the needs of the present and the demands of the future.

It will increase the wealth of the city, disseminate its overcrowded population, and centralize its commerce.

Its capacity will be unlimited, and its benefits cannot be overestimated.

VOICE OF THE PRESS

— ON THE —

NEW YORK ARCADE RAILWAY.

The following extracts from the public press, with many others of like character, which have appeared throughout the State, express, in unmistakable terms, the unanimity of the people in favor of the Arcade Railway .

The whole subject is reduced to the simplest form of a logical proposition. The people are clamorous for increased facilities for travel in the City of New York. After thorough investigation their decision is in favor of an underground railway, and they unequivocally endorse the ARCADE PLAN as the most comprehensive, practicable and desirable.

New York Sun, May 10, 1885.

The Broadway Railroad.

* * * * *

What Broadway needs, and what the city needs, is an underground railroad, or a railroad below the surface of the street, which could use powerful locomotives capable of drawing long express and way trains at the hours in the morning and evening when the travel is the greatest, and could afford accommodations utterly impossible to the elevated roads. A surface railway might be well enough along a part of Broadway below Union square, but its slow transportation would give little relief, and its benefit to business and property in the street would be comparatively slight.

The best project yet proposed is the Arcade Railway, in which the discomforts and disadvantages of the underground railways of London would be overcome and altogether obviated. Until we get some such method of rapid transit through the centre of the Island, the imperative requirements of New York will be left unsupplied, and the progress of the city will be retarded.

New York Tribune, June 26, 1885.

Travel in Broadway.

Travel is likely to increase so fast over the Broadway route that all Mr. Sharp's resources will prove inadequate to provide for it. It is the central, the natural, the convenient line of travel for this city, and when the horse-cars are unable to carry the hosts that will press to Broadway, the underground road is sure to come. There are millions—many of them—in a railway running fast trains under Broadway. *And in time even the most stubborn real estate owner may conclude that there are things in this town more important than vaults.*

New York Times, Nov. 24, 1885.

The Need of Rapid Transit.

The increase of the Sunday business on the elevated roads, caused by the reduction in the rate of fare, has had the effect of showing very clearly the inadequacy of those roads to the work devolved upon them. On week days there is a crush during an hour or two—coming

* NOTE.—The Company has a charter to build a tunnel road under Broadway and other streets, confirmed by the Legislature in 1831.

down in the morning and going up in the evening—but on Sunday the cars are crowded during the hours when there is plenty of room on other days, so that whoever boards a train six or seven stations from the terminus of the road finds it impossible to travel in comfort.

This state of things will grow worse instead of better as travel increases. There is ample room for improvement in the administration of the roads. But this difficulty of over-crowding cannot be removed by any improvement in the administration. It is inherent in the system on which the elevated roads are built.

It is plain that more passengers can be accommodated only by an increase either in the number of trains or in the length of the trains. It is evident to every passenger that the number of trains cannot be increased. The "headway" on which they are now run during the busy hours cannot be lessened with safety.

* * * * *

The risk is now very serious, and any considerable increase in the number of trains would convert it into the certainty of disaster.

A very little consideration will show that no relief can be expected from the alternative expedient of an increase in the length of trains.

But the real difficulty is that heavier trains cannot be run. The locomotives now in use are barely able to drag trains of four loaded cars up such grades as occur on all the lines, and when the track is at all slippery they have been shown to be unable to do even this. Besides the weight of the additional cars in longer trains than are now run, more powerful, and consequently larger and heavier locomotives must be employed to draw such trains. This additional weight the existing structure is not adequate to sustain. * * * * *

As the facilities offered by the elevated roads are thus inadequate to the increasing demand, and as these roads are now worked to their utmost capacity, it is plain that they no longer solve the problem of rapid transit which they were devised to solve. They have performed an enormous public service in rendering accessible for residence the upper parts of the island, and have amply fulfilled their function as a temporary expedient. *In fact, their failure is the result of the work performed by them. They have created the demand they are no longer able to satisfy. It is none the less true that the time has now come when a system of transit much more permanent, comprehensive, and efficient must be devised and put into operation.*

New York Times, June 1, 1885.

* * * * * There ought to be a prompt and adequate enlargement of the means of getting about quickly in this crowded and ill-shaped city, and the plan adopted by the projectors of the Arcade scheme is the most promising one yet proposed.

New York Herald, May 28, 1883.

More Rapid Transit.

New Yorkers seem in a fair way of getting as many facilities for rapid local travel as they want. The proposed Arcade railroad, described in another column, promises better than the elevated roads have performed, for it is to make no smoke at all, trains are to travel about twenty-five miles an hour, including stops, and the fare is to be five cents, except on drawing-room cars. That underground railroads can be successfully built and profitably run has already been proved in England, and there can be no doubt that such a road here can get enough patronage to keep it very busy. There never was a city located more to the liking of local carriers of passengers, and its facilities must be increased very greatly before the public is fully accommodated. Every one who travels between the extremities of the city will wish the new enterprise the best of pluck and luck.

New York World, May 15, 1885.

The Arcade Railroad bill is likely to succeed in getting through the Legislature. It is strongly opposed by some of our contemporaries as a "job." As it will have to pay for all the property it takes, and as the people know their rights better now than they did when the elevated roads were built, we do not see where the "job" comes in. We certainly need an Underground railroad, or some railroad that will run on a solid road-bed, such as masonry-work, through the city. The Elevated roads will in a few years be as inefficient as the horse-cars were ten years ago. * * *

New York Star, April 18, 1883.

The Broadway Arcade Railroad.

Something entirely novel in the solution of New York's rapid transit problems is proposed by the Broadway Underground Railway Com-

pany, whose charter the Assembly yesterday voted to amend and extend. Instead of boring a *dark, double-barreled tunnel* under the street, the projectors of this enterprise have perfected every detail for reconstructing Broadway into a two-story avenue. Whatever minor objections may be raised to their scheme, *it is beyond all comparison the most attractive, comprehensive and artistic conception yet laid before the public for filling a long-felt want.*

New York Morning Journal, May 23, 1885.

An Underground Wonder.

When the Thames Tunnel was built all the world wondered. When the first London underground railroad was opened the tunnel was forgotten. To-day European engineers come to marvel at the Brooklyn bridge. When the Broadway Underground Railroad is completed the Continent of Europe and the islands of Great Britain and Ireland will scarce contain the sponges that will be thrown up.

N. Y. Journal of Commerce, July 21, 1884.

A Righteous Decision.

Judge Van Hoesen's decision in the Elevated Railroad case is perfectly clear and sound. *

* There can be no complete and lasting remedy until the statute which the company makes the pretext of all their high-handed assumptions is repealed, and the roads are taken down and proper underground lines or viaducts constructed to supply the only kind of rapid transit worthy of a great city. New York never can become a peer of London or Paris till this is done. In their nature the structures are transitory, not permanent. Good enough to serve some temporary purpose in a second-rate city, they are wholly out of place in a metropolis.

New York Truth, April 13, 1884.

Rapid Transit.

* * * * *

An underground railroad is the only one which can combine both speed and safety in giving us genuine rapid transit.

Some means of escape must be found, and this appears to be the only one.

N. Y. Commercial Advertiser, May 26, 1885.

The Arcade Railway.

New York has outgrown Broadway. The

vast extension of the city, the multiplication of its population, and the changes wrought in habits by new methods of transit have produced a state of things in which the great thoroughfare is manifestly incapable of serving the purposes which it ought to serve. It is obvious that some other and better means of travel than the omnibus be provided, or Broadway must cease to serve as the great longitudinal artery of traffic. Business must seek other streets naturally less fit to accommodate it, and Broadway must become simply a wagon road.

It needs no argument to make it clear that some improved means of travel must be provided, and the question is simply what means, on the whole, will best serve the purpose at least sacrifice of other interests. Three plans suggest themselves. There may be an elevated road, a surface road, or an underground road. An elevated road is objectionable on many accounts. It would darken and obstruct the street, and, as experience has abundantly shown, it would soon be inadequate to the need, as the Third and Sixth avenue roads are now. It would seriously interfere with the circulation of air, which is none too free in this city now. It would be unsightly, and would destroy what little is left of the city's beauty below Union square.

There remains the underground, or more properly, the *Arcade plan*, and in that, it seems to us, we have at once the best and *only satisfactory solution of the problem.* There is room between the curbs for four tracks, two of which, devoted exclusively to express trains, will furnish a perfect means of really rapid transit from the lower to the upper parts of the city, while the other two will accommodate way trains that can be run at a high rate of speed for intermediate traffic. In brief, such a road will give the city rapid transit of the most perfect kind imaginable. Meantime the roadway above will be unobstructed, and light and air will not be cut off. The Arcade will accommodate sewers, gas pipes, telegraph wires, and everything else that should go underground.

It seems to us perfectly clear that in itself the Arcade plan is the best that could be devised, and that its execution is a practical necessity.

New York Evening Post, Nov. 21, 1885.

Transit Difficulties and Their Remedy.

The animated controversy which is in progress concerning the question of omnibuses or

street cars for the Fifth Avenue is calling fresh attention to what has for several years been an obvious fact—namely, the entire inadequacy of the present elevated railway system to meet the demands of the constantly increasing passenger traffic. The elevated roads were in fact a mere temporary expedient, offering no solution of the rapid-transit problem either in point of speed or amplitude of accommodation.

* * * * *

The problem is a much greater one than that which the property-owners on Fifth avenue are considering. It cannot be solved by the establishing of omnibus lines or the multiplication of street railways, excellent and necessary as both these additions to our present facilities are. Neither can it be solved by the addition of new elevated railway lines. As we have said, the elevated system is merely a temporary expedient. It has never given us genuine rapid transit, and it is shown now to be inadequate to give us comfortable transit. There is only one adequate remedy, and that is a four-track underground railway running the entire length of the city, with two tracks for local trains and two for express trains. The latter ought to make no stop below Twenty-third street, or possibly below Forty-second street, and only two or three between the Battery and Harlem. Sooner or later we shall come to it, for it is the greatest necessity of the time. Through trains would give the present elevated and street-cars over to short-distance traffic, and there would be enough of that to keep them well filled.

New York Telegram, May 6, 1884.

Rapid Transit to Washington Heights.

The number of passengers now carried by the surface railroads exceeds the number carried by them before the elevated roads were built. There is pressing need for additional facilities for conveyance to the upper part of the city, to the banks of the Harlem River, and especially to Washington Heights, the most picturesque and attractive part of Manhattan Island, where the most charming homes may be secured. But the effort to obtain these facilities is beset with schemes, the promoters of which have little regard for the interests of the people. *Experience has shown that the amount of travel on city railroads increases in proportion to the facilities furnished.* It is not limited to the growth of the population. Few people realize the enormous and

rapid growth of the upper part of this city. In 1850 there were only 113,344 people above Fourteenth street; in 1880 there were 604,851. This population urgently demands additional suburban transportation facilities. Thirty years ago the citizens of New York rode in the cars on an average only *twelve times* a year. Now they ride *more than two hundred times* apiece.

But surface roads will not afford all the accommodation needed in addition to that given by the present elevated roads. The latter do not meet the requirements of the city in the matter of real rapid transit. They have already been outgrown. At certain hours of the day they are crowded beyond their capacity to furnish proper accommodation. Moreover, they do not really furnish quick transit over long distances.

If half the projects which have been introduced into the Legislature at Albany this winter are carried out, they will transform the streets of New York into one stupendous panorama of railroad cars. They embrace tunnel and arcade, depressed, surface and elevated lines, to be run by steam, horse and cable power. In a matter of such great importance to property owners they will do well to guard carefully their interests.

The project which gives most promise of real rapid transit is that which proposes an underground line in Broadway on the Arcade plan. This contemplates separate tracks for through travel, on which trains will be run at the rate of thirty miles an hour, with stopping places at proper intervals, and other tracks for way trains with more frequent stops.

The Mail and Express, Jan. 20, 1885.

New York's Growth and the Manhattan Railway System.

The recent consideration in these columns of the revelations of the official statistics of the State Engineer, as to the railway traffic of this city, has excited an interest which has prompted further investigation of that and kindred subjects, and the search has been rewarded by an array of statistics which must be regarded as marvellous, both as an exhibition of past achievement, and as a prophecy of future progress. A study of the city's history reveals a most remarkable development during the years since the establishment of the rapid transit system. Parts of the city hitherto inaccessible have been brought within half an hour of down-town offices, and, as a consequence, building has progressed with amazing rapidity

from the centre to the northern extremity of Manhattan Island, so that, while contributing the growth of New York, the Manhattan Railway Company has literally been creating a population to still further expand its already vast traffic.

The measure of a city's growth is, first, its increase of population, and, second, its increase of real estate valuation, and a survey of the facts here presented will conclusively show that in the growth of New York the Manhattan Railway system has become a most important factor. The New York Elevated Railway was opened in 1871, but its traffic was light for several years. During the twelve months ending with September, 1878, about 9,250,000 passengers were carried, but during the next year—the first in which all the lines were in operation—the number carried exceeded 46,000,000. It is evident, therefore, that the effect of the development of the rapid transit system ought to be perceptible in the real estate valuation of 1878–9. How great the factor then introduced really was may be judged from the following statement of the valuation for ten years, with the amount of annual increase and the rate per cent.

| | Valuation. | Increase. | Per ct. |
|-----------|---------------|-------------|---------|
| 1875..... | \$883,643,545 | \$2,095,550 | 0.2 |
| 1876..... | 892,428,165 | 8,784,620 | 0.9 |
| 1877..... | 895,063,933 | 2,635,968 | 0.3 |
| 1878..... | 900,855,700 | 5,791,767 | 0.6 |
| 1879..... | 918,134,380 | 17,278,680 | 1.9 |
| 1880..... | 942,571,690 | 24,437,310 | 2.6 |
| 1881..... | 976,735,199 | 34,163,509 | 3.6 |
| 1882..... | 1,035,203,866 | 58,468,617 | 5.9 |
| 1883..... | 1,079,130,669 | 43,926,853 | 4.2 |
| 1884..... | 1,119,761,597 | 40,630,928 | 3.7 |

It will be noticed that during the years 1875, 1876, 1877 and 1878, the real estate valuation of the city increased very slowly, and in no year as much as one per cent. In 1879 the effect of the elevated railways appears in an increase in real estate valuation of 1.9 per cent. The increase the next year was 2.6 per cent; in 1882 it rose to 5.9 per cent., and last year amounted to 3.7 per cent. As from 1875 to 1879 there was no year in which the increase in real estate valuation reached 1 per cent., so there has been no year since 1879 in which the increase has been as low as 2.5 per cent.

A still more striking exhibition is presented in the statistics for the four years, 1876 to 1879 inclusive, when the rapid transit system was in its infancy, as compared with the statistics for the four years 1881 to 1884 inclusive, when the

system was in full operation, as follows:

| | Valuation. | Increase. | Per ct. |
|-----------|---------------|--------------|---------|
| 1876..... | \$892,428,165 | | |
| 1879..... | 918,134,380 | \$25,706,215 | 2.8 |
| 1881..... | 976,735,199 | | |
| 1884..... | 1,119,761,597 | 143,026,398 | 14.0 |

New York Daily News, May 17, 1885.

The Broadway Arcade Scheme.

It is a grand scheme, a magnificent one, that, if carried out, would no doubt contribute vastly to the embellishment of the great Metropolitan thoroughfare, and insure *the most complete solution* of the problem of satisfactory and sufficient rapid transit. * * *

New York Daily Graphic, March 25, 1884.

Arcade Railroad Project.

As between the *Arcade* and the *tunnel* road (which the Broadway Underground Railroad Company has a right to build) public sentiment seems to be crystalized permanently in favor of the Arcade Plan, as proposed to be carried out. * * *

Harlem Evening Times, May 17, 1883.

We publish elsewhere an interesting interview with Mr. McEnroe, of Manhattanville, on the much talked of New York *Arcade* Railroad, between the Battery and Harlem River. An underground railroad is the true solution of the rapid transit problem, and while the cost will be great at the outset, it will endure as long as time lasts. An underground railroad affords facilities for a higher rate of speed than can be safely attained on the elevated structure now in use, and if for no other reason the underground road should be constructed at an early day. This end of the city is vitally interested in rapid transit, and if a plan can be devised whereby passengers can be safely transferred from the City Hall to Harlem River inside of twenty minutes, it is the project of all others for the people to encourage. Eventually the underground road will be built, but measures should be adopted to facilitate an early start and speedy completion.

Brooklyn Eagle, March 28, 1883.

The Underground Broadway Arcade.

There is no doubt that from the peculiar formation of Manhattan Island unusual facili-

ties for rapid transit must be provided if the city is to expand in the only direction left for growth. The elevated railroads have supplied this need in a measure, but the solution offered by them is yet far from perfect, and it is very questionable whether another longitudinal thoroughfare can be partially sacrificed to the elevated system of transportation. No street is so well designed for travel as Broadway, which is, and must continue to be, the main artery of New York City.

So valuable, so essential, indeed, is this street, that its surface cannot, under any circumstances, be incumbered, and not even the most brazen speculator in public privileges has ventured a suggestion of interference with it. Nevertheless, any means that could utilize its direction without interference for purposes of conveyance, and would add to existing facilities for travel, is worthy of consideration.

The project of tunneling it at a secure depth which would not imperil the stability of the roadway or the foundations of buildings, which was first agitated some fifteen years ago, seemed to be feasible. Indeed, the experience of the Metropolitan Railroad in London has encouraged the idea, and there is no doubt that a line of railroad would be profitable, although the initial expense would be great.

The bill before the committee modifies the charter of the Broadway Underground Railroad Company by making provisions even *more satisfactory* to the public at large than the original proposition. In place of a bare *tunnel* like that of the London Metropolitan, the company proposes to build an *Arcade*. In other words, the new design covers the scheme of building a second Broadway underneath the existing street, with sidewalks, stores on either side, and such features of a street as are consistent with the subterranean conditions. There seems to be no reason why such a programme should not be carried out. By turning the cellars of the buildings now fronting on Broadway into underground main floors, an enormous addition will of necessity be made to the value of the property. With modern appliances for the consumption of gases from steam engines; with the prospect indeed of a substitution of noiseless, smokeless and gasless electric motors; with the electric light for illuminating purposes, the conditions of ventilation could scarcely be more favorable.

Advocates of the bill moreover point out the advantages that the city would gain by the construction of this Arcade. The telegraph wires could, so far as the longitudinal lines

run, pass through the Arcade, where they would be protected from accident and be removed from interference with the fire apparatus. Property would be improved by the banishment of the poles. The gas, water and steam pipes, whose repair is a source of constant danger and annoyance to the public, could be laid in the Arcade, where they would be readily accessible, and even in this minor particular the benefit to the city would be very great.

Record and Guide, April 28, 1883.

The Broadway Arcade Project.

We devote considerable space in this issue to a description of the Broadway *Arcade* project, which is now exciting so much attention among owners of realty in this city. When carried out it will make Broadway the most valuable street in the world. Not only will the present values be retained, but an additional street will be created, the traffic of which would inure to the benefit of those who hold the fee simple along the line of our great thoroughfare. The underground street would, indeed, eventually be more valuable of the two, for it could be used as a road-bed for passenger and freight cars propelled by the new motors, which are just beginning to be used in large cities. *Underground Broadway would then be connected with the entire railway system of the country.* Passengers from any city in the Union would purchase their tickets direct for the great hotels situated in that splendid thoroughfare. The cab nuisance would be abolished, and the heavy tax imposed for conveying the passenger from the depot to the hotel would be saved, as he would be landed, with his personal baggage, at the very door of his hostelry. The *freight cars*, also, could be run into the side streets, so as to discharge their contents into the warehouses of the merchants. The plan also contemplates *complete provision* for sewers, gas-pipes, water-mains, and the various underground pipes for steam-heating, telegraph wires, and pneumatic tubes, which are now a source of much embarrassment and even danger. The scheme is really magnificent, and that it is practicable is attested by the foremost engineers of the country. Ex-Secretary of the Treasury Windom is now associated with this enterprise, which was first suggested by Hon. Melville C. Smith. This should not be confounded with the *tunnel scheme*, which would have been no benefit to Broadway property. If this Arcade is ever constructed, it will justly be regarded as one

of the greatest engineering feats of the age, while its practical value to New York realty, especially on the line of Broadway, is simply incalculable.

Harper's Weekly, March 29, 1884.

The Arcade Railway.

* * * * *

A sub-surface road is the only one which will permit sufficient speed of movement to be really a rapid-transit road. Under these points of view the *Arcade Railway*, the general design of which may be seen in the illustration presented on this page, seems to offer great advantages. It is proposed to add a story to Broadway, not above, but below the present surface of the street. The general plans seem to have been studied with great care, and are designed to provide not only through trains running at high speed, but slower trains on separate tracks for local accommodation and freight. Provision is also made for sewers, gas and water mains in side channels, and also for well-lighted subway sidewalks. The present street surface and sidewalks are retained at their present grades, but are to be rebuilt as the work progresses, in an improved manner, and will form a covering for the subways underneath. In an engineering point of view the work seems to present no extraordinary difficulties.

The progress of engineering science has been such during the last few years, that with a liberal use of iron and improved facilities for quarrying, blasting, and bridging, undertakings which a few years ago would have appeared impracticable, now come within the scope of the most ordinary engineering practice.

Broadway is not only the apparent but the real main artery of the city, and yet its narrow width is of itself sufficient to discourage any attempt to place along its course an elevated road or surface tracks. It is thus to a great extent left without the facilities of local communication which are enjoyed by other and less important streets; and it is in fact so far removed from the main lines of through transit on each side, that this famous street is undoubtedly losing its prestige. The construction of the Arcade subway, with its four lines of railroad and its sidewalk, would not only render more valuable the basement stories of all the buildings along Broadway, but would, in the opinion of the engineers who

have examined the plans, practically add a story to these buildings, since vaults and sub-basement rooms could be placed at still lower levels. According to these plans Broadway is practically made a street of two stories, the upper for carriages and pedestrians, and the lower being devoted principally to railways. The methods and processes of construction have evidently been studied with a view to the least possible interruption of the ordinary traffic of the streets. It would be fatal to such an enterprise to propose a mode of construction which would require any portion of the streets to be closed during the process of the excavation and the erection of the iron columns and girders on which the upper street is to rest. The designers have overcome this first and most serious obstacle at the outset by an ingenious method of proceeding, which constitutes one of the strongest guarantees of success. This consists in constructing, in advance of the work, as the excavations and other sub-surface works proceed, a false street 500 or 1000 feet in length, its grade being only four feet above the present grade, and its parts being portable, so that it can be pieced out or lengthened at the advancing end, and shortened at the following end as the arcade is finished underneath.

This plan permits of all excavations and other work for the lower story of the street to be conducted under cover of these bridges, while the latter form a temporary street, for a short distance, only a few feet above the present level, with easy approaches for the temporary passage of vehicles. All the material excavated, and the material required for the construction of the sub-surface roadway, is to be transported through the subway itself as it advances, thus avoiding serious obstruction of whatever kind in the street above.

It is stated in the report of the engineers that all the buildings built within the last twenty years have their foundations below the lowest excavations required. In case it should be found necessary, however, to extend such foundations downward, there is abundant experience to show that this can be done without difficulty.

Taken in all its features, this project, in its engineering aspects and its apparent advantages for rapid transit, combined with local and freighting facilities, is the only one which seems to meet the pressing needs of the present and the almost positive demands of the future.

Real Estate Chronicle, May 7, 1884.**Intramural Transit—The Arcade Railway.**

The Arcade road would make Broadway a double street. None of the business or travel would be taken from the present surface of that great avenue, while a subterranean thoroughfare would be created that would be a *sui generis*, for it would not only be a street suitable for traffic and travel, but it would be a great through and local railway, having connections with the entire railway system of the country. *The scheme is magnificent, and is as practical as it is novel and alluring.* An underground road of this kind should not be confounded with the dark though useful tunnel which runs under the houses of London. That is a wonderful work in its way, but it makes very *dismal traveling*, and there are no accommodations in the *tunnel* for general business. But the Arcade scheme is a very different affair, for it involves the creation of a new street far superior in every respect to the Broadway that now is. It would extend to the houses on either side of the way. It would be well lighted day and night, and protected against the extremes of temperature in winter and summer, while the foot travelers will be shielded from rains and snow storms. It would naturally attract the shopping travel on the basement floor. In addition to the swift steam railway accommodations this underground thoroughfare would give, it would furnish ample room and verge enough for water mains, gas and steam pipes, electric and telephone wires and pneumatic tubes. It will in short solve most of the problems of subterranean New York.

The N. Y. Sunday Mercury, Feb. 24, 1884.**Arcade or Tunnel Roads.**

Bills empowering the Broadway Underground Railway Company to change their plan from a tunnel road to an *Arcade* were introduced in the Assembly and Senate last week. As the matter stands the company have a *chartered right to build a tunnel* road through Broadway whenever they see fit, and the question for the Legislature to decide is whether they shall be confined to a two track "hole in the ground," or shall be authorized to lay out a new street from the Battery to Harlem River, with ample light and ventilation, and with four tracks for express and local trains. During the past Summer the officers and engineers of the company visited England and made a special study of the underground road which

sweeps in a circle beneath London. They found that it passed directly under some of the heaviest buildings in that great city and close to the foundations of others, and that in no case had there been any disturbance on the surface. This removes the objection of those who feared that the digging out of a new street under Broadway might disturb the foundations of some of the great buildings that line its lower end. Inasmuch as London has dug its tunnel close to and beneath the foundation of buildings as massive as Trinity church, that question may be regarded as settled; and in view of the obstructive and temporary character of the elevated railway structures that disfigure our city, it will be fortunate for our citizens if the Legislature can see its way to giving our citizens real rapid transit with all its disfiguring features hidden in an underground Arcade.

New York Citizen, March 14, 1885.

After the surface, elevated, and cable railway companies get through, we predict that the old "Arcade" is destined to be the *only plan* to solve the rapid transit question through the heart of the city.

New York Sunday Courier, May 27, 1883.**Broadway Arcade Railway.**

New York has just had its day of rejoicing over the completion of a great enterprise, a solid bridgeway to its sister city, Brooklyn. In this age of magnificent enterprises and wonderful progress it seems fitting that the boom of cannon and the glad sound of rejoicing over a work completed should also proclaim the beginning of an undertaking equally as grand and imposing, and calculated to confer even greater benefits upon our metropolis. The *Arcade Railway*—a representation and description of which we herewith present to our readers—may well claim to rank as one of the grandest enterprises of the present day. With the aid of the picture and the explanations given, our readers will readily comprehend this great undertaking and the priceless boon it will be to this overcrowded city. * *

The Observer, N. Y., March 13, 1884.**Proposal to Duplicate Broadway.**

The Broadway Underground Railroad Company proposes to substitute for the tunnel road under Broadway, this city, which they claim the

Legislature of 1881 gave them the right to build, a wide Arcade. While the tunnel road would serve the business interests at the lower end of the island and the residences at the upper extreme, the company claims that the Arcade railway would duplicate Broadway with a sub-surface street well lighted and ventilated; would change the dark cellars into basement stores, fronting on pleasant sidewalks, would provide vaults, ample and accessible for pipes and wires, thus avoiding the necessity of tearing up the street; would have four tracks—two for way and two for through travel—while during the night two of these tracks could be devoted exclusively to *freight and express*, which could be conveniently distributed anywhere along the route. Such a plan, it is claimed, would increase the value of all Broadway property.

New York Uptown Visitor, April 26, 1884.

Rapid Transit.

In our last issue we pointed out the necessity for quicker and cheaper "rapid transit" on the west side. No one denies that the need exists, and is being more urgently felt every day. The only question then, which remains, is how best to meet this want. *The tenement-house districts in the lower part of the city are frightfully overcrowded.* Physicians, scientists, and philanthropists have protested in vain. The workman must live near the scene of his daily labors, and the busy merchant must have easy and quick access to his place of business. The upper portion of the city on the west side, from Fifty-ninth street to Kingsbridge, affords beautiful and healthful locations for homes for all the busy toilers of the city. Until within recent years, however, this section has been almost entirely neglected, because of its inaccessibility and the length of time necessary to make the journey. The elevated railway has partially helped to solve this important problem. But so great has been the influx of new residents, that the resources of the elevated roads have been sorely taxed, and in many instances fail to afford proper accommodation to the traveling public. Then, too, we have not as yet experienced what real "rapid transit" is. The running time from South Ferry to 155th street is about fifty-five minutes. We should have some means of conveyance by which this time can be reduced to twenty minutes. This can be accomplished, as we fully believe, by the Broadway Underground or *Arcade* railway.

We are pleased to observe that our representatives in Albany are exerting their best efforts to secure the proper legislation needed for the consummation of what must eventually prove to be one of the wisest and most beneficent schemes ever devised in the interests of this city.

Our Day, N. Y., July, 1883.

The Arcade Railway.

Occasionally there rises from among great enterprises an undertaking so prominently connected with the progress of the age that it becomes an object of universal interest. The stupendous project of the Broadway Underground Railroad Company will take rank with the construction of the Erie Canal and Croton Aqueduct in America, and the tunneling of the Alps in Europe. If the scheme of building the *Arcade Railway* is carried to successful completion, it will add another to the wonders of the world.

The Hudson River Tunnel should play a prominent part in the system of underground railroads in New York. Connected with the *Arcade Railway* it would be the desired link between the great lines leading North and East from the Island and those leading South and West from Jersey City. The objectionable feature of reaching the Metropolis from the latter by ferry would be avoided, and *passengers and freight* could be discharged at any point in the City, *without change of cars.* The two Companies should consider mutual interests, and pull together with hearty determination.

The Commercial World, March 9, 1883.

A Grand Project!

* * * * *

The only hope for the future prosperity of the city's commerce and communication lies, therefore, in the establishment of underground rapid transit.

The problem, how best to accomplish this result, has occupied the attention of some of the *greatest engineers* in the country, but the *plans* proposed by the Broadway Arcade Railway Company are the *only* ones that have met their views.

The plans have been admirably arranged so as to enable the Company to carry on work with the least possible interference with the traffic of the streets.

The advantages that will accrue to individual property owners and merchants along the road, the city and the public, are incalculable.

Mechanical News, New York, May 15, 1883.

The Broadway Arcade Railway.

Within the memory of men now living New York was a village. To-day it is to all intents and purposes, as we demonstrated not long ago, the second city in the world. What it will be fifty years hence, or a hundred years hence, with the power of growth inherent in itself and the vast country of which it will always be the metropolis, statisticians have tried to predict, but even their cold arithmetic seems like a wild flight of fancy. But whether its future be calculated or merely conjectured, enough is manifest to the most superficial observer to convince him that some adequate provision must speedily be made for the travel and traffic which flow through this narrow island.

If New York is destined to become the largest city on the globe, as seems highly probable, it is also called upon to overcome such difficulties of situation as no other city has encountered. *These all grow out of the inconvenient shape of Manhattan Island*, a strip of land thirteen and one-half miles long, with an average breadth of only one-and-three-fifths miles. Through this channel is poured the enormous foreign and domestic trade which has made New York what it is; and an ever-increasing tide of humanity, drawn hither in pursuit of gain or pleasure, flows through its streets. The elevated roads alone carry nearly one hundred million passengers up and down its avenues in a single year. Add to these the vast multitude of street-car and stage passengers and the endless throng of pedestrians, and consider that the city is held to be yet in its infancy, and the problem how to make room for the play of its activities when it shall have reached its mature development becomes a serious one, not to be trifled with or put aside.

With the greatness of New York, the greatness of Broadway as its chief thoroughfare keeps even pace. Already it may be truthfully said that no other street in the world compares with it in length and amount of traffic. The pre-eminence it has thus gained will not be allowed to pass from it, or to be shared with other parallel streets. Nature and long usage together have made it the main artery of the trade of New York, and a feeling of just pride, as well as purely selfish motives on the part of

those who occupy its frontages, will always operate to keep its position unquestioned. There was no opposition on this ground, so far as we recollect, to the construction of the elevated roads; and there was certainly no occasion for any. The only benefit derived from those roads by the avenues in which they were built, was at the points where stations were erected; and even had it been generally distributed along the line of the road, it is safe to say that Broadway had nothing to fear from the rivalry of a street bestridden, darkened and disfigured through its whole length by an unsightly iron bridge.

This leads to the question, what part the elevated roads are destined to play in the development of New York. We have spoken of them as a bridge; and they are such in more senses than one. They serve an admirable purpose in bridging over the interval between the old and insufficient means of travel by horse-cars and omnibuses, and the permanent system of the near future, by which the largest convenience shall be afforded, and the least injury be done—or none at all—to the vested interests and the external appearance of the city. There need be no disparagement of the elevated roads. For the time being they are simply indispensable; and, considering the enormous extent of their traffic, it must be admitted that they are skillfully and carefully managed. But we venture to predict that in the New York of the year 1900 they will not be known. They will have been superseded by a system which combines absolute safety, permanency and convenience, and neither disfigures the city nor diminishes the rental of any property on its streets.

No enterprise of this character, however conducive to the public advantage, has failed to encounter stubborn opposition. But *this enterprise* has not only been highly commended by engineers, but, considering its magnitude, has been received with marked favor by the press and the general public. The demand is urgent and must be met; and the difficulties to be overcome increase with every year of postponement. *It seems demonstrated that the Arcade plan presents the most feasible, complete and unobjectionable plan of relief.*

The Court Journal, Jan. 7, 1884.

More Rapid Transit Needed.

We have come to the conclusion that the greatest boon that can be conferred on the live business people—and in fact upon the City of

New York—is the construction at once of the Arcade railroad under Broadway, from the Battery to Harlem River—a scheme so simple, so clearly practicable, so beneficial in every requirement necessary to the ends to be attained—namely, speed, safety and comfort—that we feel constrained to say: “Why was it not built long ago?” We have determined, after investigating somewhat the plans, to lend our voice to this grand scheme, and hope to see all who have the power to aid this plan interest themselves in the matter, feeling sure they will hereafter feel proud of having aided to build an *Arcade* in the city of New York, which will be one of the handsomest wonders of the world and one of the greatest comforts of New Yorkers.

House and Home, New York, Oct. 15, 1883.

A Stupendous Enterprise.

Two years ago we published a sketch purporting to be the dream of a New York merchant, wherein he foretold the time when there would be an underground New York as well as the one we are so well acquainted with. That dream bids fair to be realized.

Hon. Melville C. Smith, a worthy citizen, has projected a scheme whereby we can have an underground railway and underground stores, without the inconveniences, bad ventilation and noisome smells of the English Underground Railway system. As New York is destined to become the metropolis of the world, we hope Mr. Smith's system will be a success. The Arcade running the whole length of the island, and on both sides, would be a part of a complete system, and having four tracks would afford abundant accommodation to *through travel, way travel, freight and express*. It would not be a detriment to the water, gas, and other systems of pipes, but provides a sub-way where they would be perfectly accessible.

No other city in the world so needs an express railroad throughout its entire length, for there is no other city that is so long and narrow, confined by wide rivers, with the business houses at one end and the residences so far away at the other, receding in a direct line further and further every year.

Merchants' & Manufacturers' Review,
May 23, 1885.

The Arcade Railroad.—Bright Prospects of its Speedy Completion.

If “nothing succeeds like success” be an understandable expression, and means what is

generally understood by it, then Mr. Melville C. Smith, the President of the Arcade Railway Co., and his associates, are to be warmly congratulated on the passage of a bill by the recent Legislature of this State authorizing the construction of an underground railroad from the Battery to the upper portion of the city.

The rapid and continuous growth of the city requires any additional means of rapid transit that can be put into operation in order the better to unite the distant parts more closely together and to develop its many natural and acquired advantages. In our opinion the *Arcade Railway Co.* presents the most effective and plausible scheme yet devised for this purpose, and one against which fewer valid objections can be raised than any now in actual operation.

New York Record and Trade Reporter, March 17, 1884.

The Broadway Arcade Railway.

The inadequacy of the elevated railroads for furnishing facilities and conveniences proportionate to the ever-increasing necessities of the commercial and private interests of the metropolis has been so fully demonstrated that New Yorkers have long since ceased to look upon them with that strong degree of pride which manifested itself upon the inauguration of that system of “rapid transit.” To meet the present and future needs of this progressive age, a work is now being pushed forward which in magnitude, grandeur of conception and importance outstrips the elevated railroad scheme, and vies with that of the Brooklyn Bridge itself. Indeed, in some respects, its importance far exceeds that of the great highway wedding the two great cities; for, as we will show further on, the benefits conferred by the proposed underground railway will be not local but *national* in their character, facilitating the mighty workings of the world's commerce.

As regards the advantages offered to our local traffic by the *Arcade* road, they are so immediate and palpable that their very mention would seem superfluous. The relief of Broadway alone, outside of broader considerations, would justify New Yorkers to give their hearty and unqualified support to this gigantic undertaking.

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New York Scientific Times, May 9, 1883.

A Stupendous Undertaking.

In another column will be found a full account of the great enterprise that has been

projected by Mr. Melville C. Smith, to be carried out by the Broadway Underground Railroad Company. It is a work that will take rank with the tunneling of the Alps and similar stupendous undertakings in which the human race have engaged at one period or another of the history of the world. Europe has underground railways, but they will be dwarfed into insignificance by that of New York. *The project has only been brought to its present condition of forwardness after years of incessant public and private toil, and after encountering untold opposition from all sorts of interests, legitimate and illegitimate.* An ordinary man would long ago have retired, beaten and dismayed. When this mighty work is completed he will be looked up to as one of the benefactors, not merely of the Empire City but of the American people. * * *

Empire State Workman, Jan. 31, 1884.

Broadway Arcade Railway.

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During the past summer a number of the officers and engineers of the Broadway Underground Railway Company spent several months in examining the underground railways and structures of London and Paris, with a view to the comparative advantages of an Arcade or tunnel railway for New York. The results were every way satisfactory, and the important facts collected have just been embodied in a very interesting report by Gen. W. J. McAlpine, and should be procured and read by every property owner on Broadway, and every person interested in trade and travel in New York.

As shown in the sketch, the plan of the arcade railroad is simply to make a double Broadway. * * *

The *Arcade* will provide complete accommodation for through and way transit of passengers and freight between the extreme limits of the island, and along its main artery.

New York American Progress, May 5, 1883.

The Arcade Railway.

We give elsewhere to-day a full description of the plan of the proposed Arcade Railway. The plan is not only popular, but it is almost the first of the many measures suggested for the relief of Broadway that seems entirely practicable. As will be seen by our description, the proposed road differs entirely from

the tunnel roads under the streets of London, and obviates the objections arising from want of light and ventilation, which distinguish the ordinary railways underground. The entire originality of the new plan commends it. It relieves Broadway by simply doubling that street, and giving us two great central thoroughfares in place of one. There is no need now for discussion whether such a road will pay; the capitalists who build the road are concerned in that, and the fact that shrewd business men will put their money into this enterprise is a guarantee at once of its success and its necessity.

The Arcade plan is not English, but American. It affords light and air in abundance, without artificial means. Instead of a *dark tunnel*, its cars will move from the Battery northward through an *elegant and comfortable Arcade*, always about as pleasant as the street above, and in foul and stormy weather a great deal more so. It proposes to invade no private rights, and endangers no vested interests, to take no property without paying its full value, and provide the metropolis with the means of safe and rapid conveyance for both *freight and passengers*, without injuring a single one of the facilities for life and business which we now possess. *It will injure nobody, and benefit everybody.*

American R. R. Journal, June 1, 1883.

Broadway Underground Railway.

Within two decades three great public enterprises have been projected in New York city—the New York and Brooklyn bridge—the tunnel under the Hudson River connecting New York and Jersey City, and last but not least, the Broadway Underground Railway. The first is finished or nearly so, the second is in course of construction, and preliminary work upon the last is being pushed with vigor. * *

New York Society Journal, June, 1885.

"A many years ago," my old-time friend, Melville C. Smith, projected the idea of an underground, or arcade railway, and has been pluckily fighting for its completion ever since. It took Jake Sharpe thirty-four years to put through his surface railway scheme—but he has succeeded at last. I venture the prophecy that Melville C. Smith will succeed with the Arcade. All he has to do is to live long enough and kill off some of the old fogies who think this city is what it was a hundred years ago.

Albany Evening Journal, May 12, 1884.

The Arcade Railroad bill has attracted so much attention, not only in New York but also throughout the State, that we give elsewhere in THE JOURNAL to-day what its projectors have to say in its favor. The influences that uphold the measure are exceedingly strong, and represent much of the wealth and intelligence of New York city. The arguments made before Governor Cleveland against the bill were published on Saturday. They appear to be *more than met by the statements on the other side* given to-day. The leading papers of New York, which may be relied upon as a rule to indicate the sentiment of the people of that city, *all favor the bill*. The Arcade Railroad, if built, will be to New York city what the famous underground lines of London are to that great metropolis, with the additional advantages of much better ventilation and light than the tunnel roads of London can ever have. The new enterprise, as an engineering feat, will rank with the Brooklyn bridge and other famous undertakings of the best engineers in the United States.

Albany Argus, April 19, 1884.

The State Senate ordered the Broadway Arcade bill to a third reading on Friday. The measure is one of the most important in its effects brought before this legislature. It contemplates the creation of a second Broadway (underground) lighted, housed and weatherproof, with all the gas, water, steam-heating and sewer pipes, as well as those to contain telegraph, telephone and electric light wires in tubes, arranged on the sides as they subterraneously are in Paris. Aside from the debatable, legal, scientific, and constitutional questions in the bill, the transformation which it proposes to produce is startling and not unpicturesque.

Albany Times, May 26, 1885.**The Arcade Railway.**

Great changes have been going on in the city of New York, and the New Yorker of twenty or even ten years ago returning to the metropolis would scarcely recognize it as the same city. But the city is even yet in a transition state, and greater changes are contemplated than the erection of great buildings, the opening of new streets, or the construction of the elevated railroad or of the Brooklyn Bridge. The existence of the latter structure, despite its magnificent

proportions and its great cost, may be, for all practical purposes, entirely unknown to thousands of New York business men, so great and so numerous are the commercial interests that can dwarf and even obscure a work of such magnitude. A peculiarity of the city is, that while the great side thoroughfares, running north and south, are crowded with railroad tracks, both surface and elevated, Broadway, the great central artery, has been left free from what must be regarded, in spite of its great conveniences, as an obstruction. New York has ever been proud of its Broadway, and jealous of its ancient rights and privileges, and schemes to construct a railroad in Broadway, either on the surface or above and below it, have always been strongly opposed. Now, however, the pavement has been broken for a surface railway which it is expected, if not interfered with by the courts, will be in operation in six weeks. A far bolder scheme, however, is that of the Arcade Railway Company, whose bill, authorizing the construction of an underground rapid transit road under Broadway and Madison Avenue through the entire length of those thoroughfares, was passed by the Legislature just before its adjournment, and is now awaiting the signature of Governor Hill.

There are some objections doubtless to the present plan, and there are some obstacles, but we believe that *the Arcade railway will sooner or later be an established fact*, and if the Governor finds the *present bill objectionable another Legislature will remedy the defects*. With the elevated roads and the Brooklyn Bridge established, a tunnel road under Broadway and under the two rivers cannot be long delayed.

Utica Morning Herald, March 13, 1885.**The Broadway Underground Railroad.**

It seems reasonably certain that New York city is at length to have an underground railway that will eventually run the full length of the island.

The travel between City Hall park and Central park has now become so immense that the existing lines of cars, both surface and elevated, are no longer able to accommodate it, and the time seems propitious for undertaking the construction of a tunnel road.

The figures representing the increase of travel are exceedingly interesting. "The growth of passenger traffic in New York is something enormous. In 1850 the traffic was 6,835,548 persons; in 1860 it was 36,455,242;

in 1870 it was 115,139,553 ; in 1880 it was 211,222,348 ; last year it was 284,115,862. The growth of the passenger traffic in the last seven years, since the elevated roads began running, is 120,179,564 a year, or 23,476,944 more than all the elevated roads now carry. At the lowest estimate provision will have to be made in 1890, six years hence, for an increase of traffic of 138,000 passengers.

This statement shows how vitally important it has become that some new means of communication between "down town" and "up town" should be established. *And it is a subject in which not only New Yorkers but the whole country feels an interest. Everybody in these days goes to "the city" from once to half a dozen times in a year. And everybody has had some experience with the crowd awaiting transportation from the post office and vicinity, between three and four o'clock in the afternoon. A new steam road that could send out its trains every three minutes would do more to relieve this pressure than a dozen additional surface roads ; and the elevated road is already worked to the full extent of its capacity.*

Syracuse Courier, May 9, 1884.

Of all the schemes to provide New York with rapid transit, not one has commended itself to the judgment not only of the expert engineers, but of the public as well, as the Arcade underground. For years this plan of rapid transit has been more or less the subject of discussion, and it is notable that it has steadily gained in favor with thinking men. While the air at Albany was full of disgraceful scandals concerning other New York railroad schemes, it is a remarkable and most creditable fact that the breath of suspicion never once fell upon the Arcade. Here was one measure at least that went through on its merits—one in which no one has ventured to charge that questionable, corrupt or improper inducements were offered to any member of either house for his support.

It must have been a refreshing sensation to the rural members to be able to cast their votes for this great enterprise, on its merits, and without a suspicion of questionable influence or corrupt appliances. A large number of experts and the most eminent civil engineers and scientists in this country have certified to the utility and safety of the road, as well as the entire practicability with which it may

be built, maintained and operated without detriment and without injury to the streets or adjacent property. There is no other consideration than merit, and demonstrated success in other countries, which could induce such men as George B. McClellan, John B. Jarvis and William J. McAlpine to put on record their indorsement and approval of such a scheme.

Boston Daily Advertiser March, 13 1884.

An Arcade Railway. A proposed Improvement for Broadway, New York.

A New York paper in discussing the plan for making an Arcade under Broadway, says : It will practically create a second Broadway. Every building along which the Railway will run will have a new story added to it. This will be effected by changing the useless cellars into basement stores at a small outlay to the owner, thus yielding a substantial rental where there is now no derivable income. The Arcade will be well lighted, while the atmosphere will be pure and the ventilation perfect. The company will have the power to construct subways for the accommodation of sewers, steam, gas and water pipes, as well as telegraph and telephone wires and pneumatic tubes. These will all be easily accessible, and so obviate the necessity for the streets being continually torn up. During the winter the Arcade will be a pleasant retreat from the inclemency of the weather, and in the summer will afford escape from the scorching rays of the sun. Ladies especially will be benefitted, as they will be able to do their shopping despite climatic adversities. The Arcade will be a four-track railway, with passenger and freight trains, way and through, running every two minutes. Merchants, importers and the various business houses on Broadway and the adjacent streets will be able, at their very doors, to ship and receive goods to and from all parts of the United States.

Manufacturers' Gazette, Boston, Aug. 18, '83.

Sub-Surface Transit.

In treating of better means of transit in large cities, the Gazette has had occasion before this to say that not a surface railway nor an elevated railway, but an underground railway was the ideal thing. Cable roads may serve the purpose for a time ; "L" roads are likewise an efficient aid to rapid transit until something better is found, but the best way of all is to put the rails below terra

firma. Such an enterprise is projected in New York city. * * * *

We are not sufficiently versed in engineering to say that the plans of the projectors can be carried out, and in such a way as to leave the surface road perfectly secure, but engineers who ought to know, Gen. George B. McClellan among the number, have testified that there are no difficulties attending the construction of the work which cannot be overcome with engineering skill, and at a comparatively moderate cost.

The practicability of the enterprise established, the advantages likely to accrue from it are obvious.

Pomeroy's Democrat, Denver, Colo.

[*Editorial Letter.*]

NEW YORK, Jan. 28, 1883.

Relief of Broadway.—Arcade Railway.

It is safe to say that the day after the late snow storm a full hundred thousand men and women would have given a dollar each for an underground railway the length of Broadway. The snow was deep in the streets; teams pulled and plunged with their loads. Teamsters swore; carts, coaches, cabs, carriages, omnibuses and transfer wagons were jammed and wedged together. Horses were down, pedestrians were run over, and bad nature was engendered. In all such skirmishes country people, who are timid and not up in New York ways, suffer the most.

An Arcade railway, with wide walks each side for pedestrians, will always be a necessity and a comfort, but never more so than in stormy days. A few weeks ago I gave a brief account of this gigantic enterprise, with two illustrations, in a letter to the Democrat, but did not and could not tell the quarter of the benefits that would result from such a doubling of the capacity of Broadway.

The man who furnishes employment to labor is a public benefactor. The man who is inspired or educated to see how to confer lasting benefits, how to lessen care, struggling, discomfort and irritation, is a positive benefactor. Men who unite to carry on a great work like the Broadway underground railway, deserve all the capital, the aid, the legislation, and the encouragement it is possible for them to receive.

BRICK POMEROY.

Reading, Penn., Times, June 6, 1883.

A Stupendous Undertaking.

The recent death of our late townsman, Edward M. Clymer, Esq., calls to mind the great scheme with which his name and enterprise were linked. We refer to the Broadway Underground Railway, in the organization of which he was one of the charter members, and also treasurer at the time of his death.

The better for the readers of the TIMES to appreciate this stupendous undertaking, which will take rank with the tunneling of the Alps, we have secured a pictorial representation of the projected arcade railroad. The details of the illustration are so complete as scarcely to require explanation. *Europe has underground railways, but they will be dwarfed into insignificance by that of New York.*

There is no doubt that this plan to make a double Broadway is one of the grandest enterprises in relation to public travel ever projected in any country, and every good citizen of New York, as well as the millions who visit the great metropolis, will no doubt rejoice to see the company carry it speedily and successfully through.

New York Daily Graphic, April 13, 1883.

Broadway Underground Railway.

TWO TRACKS, OR FOUR?—TUNNEL OR ARCADE?—WHICH?

We present in this number of the *Graphic*, a picture of the projected Arcade Railroad under Broadway, as it will look when constructed and in use, the view being from Pine street up Broadway. The details of the illustration are so complete as scarcely to require other explanation. It will be seen at a glance that this is neither a surface, a tunnel, nor an elevated railway, but a device which combines the chief advantages and is singularly free from the chief drawbacks of all.

The Broadway Underground Railroad Company, of which Melville C. Smith is President, has offices in the Boreel Building. At a recent meeting of the stockholders ex-secretary of the Treasury, William Windom, H. C. Gardiner, Jerome Fassler, Sr., and Edward M. Clymer were among the trustees elected, and it is reported that several large and prominent property owners on Broadway are to be added to the Board. This company possesses a charter from the Legislature authorizing it to construct a tunnel road under Broadway and Madison avenue from the Battery to the Harlem River

New York Daily Graphic—Continued.

OBJECTIONS TO A TUNNEL ROAD.

The Commissioners appointed by the Supreme Court recently expressed the opinion that a tunnel road under Broadway was not the right kind of a rapid transit road to build. The present Broadway Underground Railroad Company is of the same opinion, and it now asks the Legislature to modify its charter so as to enable it to build a better one, and satisfy a more enlightened public opinion.

Tunnels ought to be the last resort of the railway engineer. Short ones afford a pleasurable, because a brief, excitement to women and children; but to the experienced traveller they are always nuisances in exact proportion to their length. In light and ventilation they are of course deficient; while in the possibility of wholesale slaughter in cases of accident they are a constant terror.

But a tunnel road under Broadway, with its disadvantages would be vastly better than no rapid transit along this important line. It would greatly accommodate thousands every day; and, as the projectors believe it would be a profitable investment, they will certainly build it within the terms of their charter, unless they are permitted to substitute an Arcade road, as shown in the picture, perfectly adapted to the needs of modern travel and to the conformation of this superb thoroughfare.

ADVANTAGES OF AN ARCADE ROAD.

But if the bill now before the Legislature shall become a law the great problem of rapid transit in the metropolis will be solved for a century; the interests of property holders, not only in the upper part of the island, but along Broadway, will be promoted and protected, and an avenue of unrivalled solidity, unique beauty and abundant spaciousness, capable of accommodating a million passengers a day, will be added to the transporting capability of the city. This is no dream of visionaries; it is a project of practical men which has the approval of the most accomplished and eminent engineers of the country and the offer of money enough to build it from end to end during the next five years.

DESCRIPTION OF THE PICTURE.

As shown in the sketch, the plan of the Arcade Railroad is simply to make a double Broadway. The street will be excavated to the depth of about seventeen feet under the roadway for a four-track railroad, and twelve feet under the present sidewalks for duplicate sidewalks by the side of the railroad beneath, on a level with the platform of the cars.

THE UPPER BROADWAY.

The roadway will then be replaced at its present level by arches of solid masonry, rendered water-tight by impervious asphaltum coating, resting on iron columns, and covered with a solid wagon-way of the very latest and most approved pattern. This road-bed will never need to be disturbed until worn out.

During the day the railroad will be lighted from above through six feet width of open area on each side, which the law now allows adjoining every building, and also through bull's-eyes of glass along the curbstone, as in front of the *Evening Post* and other large buildings. Indeed, if required, the whole sidewalk can be made of glass, like that in front of the "Florence," at Fourth avenue and Eighteenth street, and other fine structures and upper floors of many arcaded buildings in lower Broadway. Besides the open areas, ventilation will be had through similar spaces at the street at the entrances of the corners and stairways. The stairs will be only ten or twelve feet high,—less than half the length of the average stairs of the Elevated railways, while the cars will be rendered still more accessible by the elevators in the stores on every block, which will doubtless be sent down to the basement.

THE ARCADE OR LOWER BROADWAY.

Upon the solid earth of the lower street will be built four-tracks, the two inside to be used for express trains, to stop only once in about a mile, and the two outside for slower cars for the accommodation of way passengers. The accommodation trains will run only about as fast as the present trains of the Elevated railroads; while the express trains, it is expected, will run from the Battery to the Harlem River in fifteen to twenty minutes. At each side of this lower street will be the sidewalks, beneath which vaults can be constructed if desired. Through these open spaces, as already indicated, with glass in the sidewalks if necessary, and the vaulted transepts at the corners, perfect daylight will be supplied below, and at night the whole of the lower roadway will be splendid with electricity.

The lower sidewalk can be made available for trade. The basement, now virtually wasted for the storage of unpacked goods and old boxes, can easily be converted into valuable and accessible stores, with show windows as attractive as those in the upper street.

Indeed, it is believed by competent business men and real estate owners on Broadway, that

New York Daily Graphic—Continued.

the rental of this basement would approximate to the present rental of the main floor.

FOUNDATION OF BUILDINGS.

The foundation of every building on Broadway erected within the last twenty years is sufficiently low not to be disturbed by the proposed excavation. A few old buildings will have to be shored up and their foundations deepened, a common building operation nowadays. In fact, the foundations of the buildings would be far less disturbed by the Arcade plan with its shallow excavation than by the construction of a tunnel road, such as the company now has a right to build, twenty-five or thirty feet under Broadway. Of course, in the light of the fact, that Chicago has been raised bodily while business went on uninterruptedly in the buildings, and that in riding down Broadway one frequently sees thirty foot excavations for new buildings adjoining thin side walls with insufficient foundation, it will not be seriously claimed that the matter of excavation is an obstacle to the construction of the Arcade Railroad. Indeed the Commissioners themselves, in their report against a tunnel road, which would encounter far greater obstacles, speak as follows on this point: "But it appears to be well and sufficiently proven that the present state of the science of engineering is such that a sufficient amount of time and money and the use of adequate means are the only limitations to the successful performance of the work proposed."

PROVISIONS FOR SEWERS, ETC.

There will be no interruption of the sewage system or of the water and gas supply along the line of the great thoroughfare, but the water pipes, gas pipes, sewers, telegraph and telephone wires, electric light wires, pneumatic tubes and all devices for the cleaning of the city and the accommodation of the public will be provided for in the Arcade structure itself, where they will be out of the way and yet where they can be reached in a moment without expense at any time for the purpose of adjustment and repair. These will be located either under the lower sidewalks, as shown in the illustration herewith, or under the railroad tracks, according to a similar plan that has been approved—whichever may be preferred. Indeed, the telegraph and electric light wires, &c., could be carried suspended along the upper part of the arcade.

The *Herald* and other leading papers have voiced the imperative demand of the business interests and of the public for provision by

vaults or excavations to meet this constantly increasing necessity and obviate these unbearable obstructions to the streets, and Mayor Edson, in his recent message, speaks as follows: "An important question arises here, namely, whether some system of general city improvement cannot be adopted whereby this frequent upturning of our thoroughfares, with its consequent disturbance of travel and of business, may not be wholly prevented. Here would seem to be an opportunity for some person of enterprise, or for some private corporation to mature a plan for underlaying the streets with a single excavation which shall provide not only for the water, gas and steam pipes, but also for telegraph and telephone wires, and other appliances which the public convenience may hereafter require."*

The water and drainage from the upper roadway will reach the sewers below through the hollow supporting columns of iron.

NO INTERRUPTION OF TRAVEL.

There will be no interruption of travel during the process of building, as the engineers have devised a moveable bridge extending from side to side of the street, and only four feet higher than the present level, under which the work will be continuously carried on as it is advanced, the earth being removed through the completed end of the road.

FREIGHT TRAINS.

As only two tracks will be required during the night for travel, the other two can be assigned to freight transportation. Merchandise will not only be carried up and down the island, but as the gauge of the Arcade tracks will be uniform with that of the railroads centering in New York, freight can be transported between the warehouses and distant parts of the country without breaking bulk. *This will save an immense amount of money and solve permanently and most satisfactorily a problem that has puzzled the brains of New Yorkers for a generation.*

DIRECT PASSENGER TRAVEL.

On the express tracks can be run through trains, with parlor and sleeping cars, to be switched upon the tracks of the roads at the North and run to all parts of the country, so that citizens of New York can take the cars near their own homes for any destination, or, coming from a distance, can be put down near their own homes or a hotel without a long and disagreeable ride in some other vehicle.

* See articles on "SUBWAYS."

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THE ROUTE.

The route of the Arcade road will be the same as that for the Underground Tunnel road which the company is authorized to construct, and which was originally selected with a view of dividing the island into three nearly equal subdivisions—from the Battery to Madison Square under the surface of Broadway, thence forking under upper Broadway on the west and under Madison avenue to Harlem River on the east. This is directly along the line of greatest pressure, where the rush of travel will be most conspicuously relieved. It is and always will remain the popular centre of transit up and down the island; but as it cannot tolerate horse cars and must not be abased, this Arcade project offers its only practicable relief.

THE COMMISSIONERS' REPORT CONSIDERED.

The objections which the Commissioners appointed by the Supreme Court have outlined to a tunnel road are, most of them tenable.

They reasonably object to a tunnel road because it would obviously lack capacity to accommodate the travel. The four-track Arcade road, on the other hand, can transport 100,000 passengers an hour—as many as will require transportation along the line during the next generation.

The building of the Arcade road, according to the plans proposed, would create no obstruction whatever, and the road-bed, when completed, would be as perfect as science could devise.

They reasonably object to a tunnel road because it would be dark, ill-ventilated and unwholesome. The Arcade would be well ventilated, light and pure.

They reasonably object to a *tunnel* road (from Park Place to Fourteenth street) because it would connect no great systems of travel; it would begin nowhere and lead nowhere. The Arcade road would begin somewhere and lead everywhere; it would furnish just exactly the swift passage which the narrow island now imperatively demands, receiving the tens of thousands every morning from the upper wards and Westchester County, and conducting them to their business and returning them quickly to their homes at night. The Commissioners, in their adverse report on the tunnel road, admit that "as a link of a completed system of similarly constructed railroad extending southerly to the Battery and northwardly from Fourteenth street to a connection with other established lines of railroad traversing the city through its entire

length, the proposed railroad of the petitioner might be very desirable, if not necessary, when constructed in a proper manner and under proper conditions, although at the expense of public and private interests."

They reasonably object to a *tunnel* road because it would not accommodate way travel, and would bring to the trade of Broadway no advantages to compensate for the tearing up of the street. The Arcade road would have an entrance and an exit at every corner, would provide for all pipes and sewers, would supersede all telegraph poles, would duplicate the trade capacity of Broadway by adding a light and eligible store under every building, and would render it so accessible to citizens and visitors as to make it once more and for all time the unrivalled business centre of the island.

The capacity of a business street to meet the requirements of trade and travel is conceded to be the measure of its real estate values. The Arcade would not only duplicate the street itself, but it would use a motive power for transportation vastly more effective than can be applied to the present surface, banishing most of the drays, carts and obstructive vehicles; would prevent the gorging of Broadway and treble its capacity in all essential particulars for which a great thoroughfare is valuable. The drays and carts which gorge and block the surface street, and lightning express trains in the bowels of the earth in dark, deep, sunken tunnels would be alike poor customers for Broadway.

MORE RAPID TRANSIT NEEDED.

Broadway, as one of its heaviest real estate owners recently remarked, "has been nursed to death," till plebeian avenues have rapidly gained upon it and threaten to outstrip it in the race, unless it avails itself of the best system of rapid transit without further delay. The stationary values of central Broadway plead no less imperatively than the vacant lots of the upper wards and the multiplying villages of Westchester County for a road through the length of the island that shall be at once swift, safe and efficient.

The elevated roads have reached their full capacity during the hours when they are most needed. They cannot run trains oftener or faster, or with more cars than at present. No more of the rich and beautiful avenues can be sacrificed to them. But travel on the city, horse and steam cars is rapidly increasing—two or three times as fast as the population, as the

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following table shows :

AVERAGE NUMBER OF RIDES FOR EACH RESIDENT.

| Year. | Times. | Year. | Times. |
|-----------|--------|-----------|--------|
| 1855..... | 31 | 1866..... | 93 |
| 1857..... | 37 | 1867..... | 112 |
| 1859..... | 43 | 1872..... | 124 |
| 1860..... | 47 | 1877..... | 133 |
| 1864..... | 61 | 1881..... | 174 |
| 1865..... | 83 | | |

In 1840 the population of New York residing above Fourteenth street was only 41,342 ; now it is 750,000.

WHAT OTHER NEWSPAPERS SAY.

Since the ingenuity of man has been applied to the improvement of cities, no conception more magnificent than this of the *Arcade Railroad* has been brought forward. If the road were constructed every New Yorker would be more proud of it than of any other ornament to the city, and we should all wonder that men could have been found to oppose it, just as we now wonder at those who fought against the introduction of the Croton water. It will injure nobody and benefit everybody.—*N. Y. Sun*.

A more brilliant and thoroughly practicable conception than that of the *Arcade Railway* was never evoked for the accommodation of popular circulation in a great city, and the value of it is that whenever applied, or if universally applied, it builds a city two stories high, thus doubling the surface for commercial transit and popular travel.—*Herald*.

We trust that every property owner and inhabitant of New York who has the grandeur of the Empire City at heart, will sustain the project in order that the Legislature may be more inclined to sanction such a legitimate, such a magnificent and such a brilliant undertaking.—*Boyd's Shipping Gazette*.

The *Arcade* plan will add an immense avenue traversing the heart of the metropolis, and affording a scene without parallel the world over.—*Moore's Rural New Yorker*.

The *Arcade Railway* combines the advantages of all the other plans and is singularly free from their defects.—*Engineering and Mining Journal*.

This will give to the people the great boon of sure, rapid and cheap communication, and be an attraction to out of town visitors, second only to that of the great Central Park.—*Scientific American*.

All other plans thus far presented sink into mere *ratholes* when compared with the *Arcade*.—*Brooklyn Daily Union*.

Had such a railroad been constructed ten years ago 400,000 people and hundreds of millions' worth of property would have been saved to the State.—*New York Tribune*.

The bill before the committee modifies the charter of the Broadway Underground Railroad Company by making provisions even more satisfactory to the public at large than the original proposition. In place of a bare tunnel like that of the London Metropolitan, the company proposes to build an arcade. In other words, the new design covers the scheme of building a second Broadway underneath the existing street, with sidewalks, stores on either side and such features of a street as are consistent with the subterranean conditions. There seems to be no reason why such a programme should not be carried out.—*Brooklyn Daily Eagle*.

From among the petitions of many thousands of Broadway property owners and influential citizens, we are permitted to publish the following from the revered and lamented Peter Cooper :

PETER COOPER'S OPINION.

To Messrs. James Brown, A. A. Low, John Jacob Astor and Wilson G. Hunt :

* * * * *

After having examined the various plans proposed for relieving Broadway, and at the same time securing the cheapest, most convenient and most rapid transportation of *freight* and *passengers* from one extremity of the city to the other I have no hesitation in saying, that the plan recommended by Mr. Smith presents *advantages incomparably greater* than any other plan that has ever been presented. Yours, with great respect.

PETER COOPER.

COMMODORE VANDERBILT'S APPROVAL.

In the same connection it may be well to present the subjoined :

I would be much pleased to have the *Arcade Railroad* completed under Broadway. *I think it is an enterprise that the citizens of New York would be proud of.*

CORNELIUS VANDERBILT.

AMERICAN INSTITUTE REPORT.

"The rapid growth of New York City in wealth and population, with the corresponding increase in trade and travel, have so crowded the thoroughfares and overburdened the means of transportation that the imperative demand for relief has naturally awakened the active thoughts and creative faculties of many minds. Among the numerous plans presented apparently the most complete and comprehensive is that of the *Arcade Railway*."

New York Daily Graphic—Continued.

The plan has been received with general favor by the public and by engineers. Of the latter, General E. L. Viele, Mr. William J. McAlpine, C. L. McAlpine, Colonel J. W. Adams, Silas Seymour, J. N. Greene, and D. E. and I. B. Culver, among others, have given it their hearty endorsement.

JUDGMENT OF EMINENT ENGINEERS.

The Arcade provides complete accommodation for through and way transit of passengers and freight between the extreme limits of the island and along its main artery.

It furnishes an arcade avenue and promenade, well lighted and ventilated, convenient for pedestrians at all times, and with special advantages in warm, cold or stormy weather.

It can be constructed without interruption either to the travel on the street or the convenient use of the buildings adjacent, and without endangering any of the structures along the street and with arrangements for a better location of the water and gas pipes and sewers than now exists.

The route selected—namely, that along Broadway, is determined by the topography of the island.

It in no case occupies or injures any private property, but in nearly all cases greatly enhances the value of the property along its route.

There are no difficulties attending the construction of the work which cannot be overcome with engineering skill, and at a comparatively moderate cost.

Finally, it meets a necessity in the most complete and unobjectionable manner.

Signed—George B. McClellan, John B. Jarvis, William J. McAlpine, Silas Seymour, Egbert L. Viele, Charles H. Haswell, Julius W. Adams, H. G. Wright, Sylvanus H. Sweet, John Newton, I. F. Quimby.

Another report, still more elaborate, and made by a Board of engineers of equal eminence and ability, closes as follows :

Eighty millions of people cross the ferries annually to the lower end of the island, and 200,000,000 come on railways and steamers. It is for this great multitude, and the myriads who for years to come will throng the busy marts of the world's great metropolis, that we are to provide. What the Erie Canal was to the Empire State; what the Pacific Railway will be to the continent; what the Atlantic cable is to the world—great necessities of modern civilization—such will be the Arcade

Railway to the city of New York! And when it shall have been completed, and thronged through all the hours of the day and night, instead of being regarded as singular in conception and a wonder in execution, *the only marvel will be why it was not done before.*

WHAT IS CLAIMED BY ITS PROJECTORS.

No other city in the world so needs an express railroad throughout its entire length, for there is no other city in the world that is so long and narrow, confined by wide rivers, with the business houses at one end and the residences so far away at the other, receding in a direct line farther and farther every year. The Arcade road will possess these advantages :

1. It can carry nearly 1,000,000 passengers a day at the highest practicable rate of speed.

2. It will combine all the possible conditions of safety.

3. It will have plenty of light and air.

4. It will take none of the surface of the island, and instead of destroying or injuring property, will improve and increase it. No matter what remuneration the owner may receive the destruction of property is a public injury and absolute loss.

5. It will have four times the capacity of any other rapid transit road. It will equally accommodate way travel and through travel, as no double track can do, frequent stoppages being incompatible with fast travel and infrequent stoppages inconvenient for way travel.

6. It will furnish to the public, free of charge, a convenient and always accessible vault for all sewers, pipes, wires, and other paraphernalia of the distribution service, which have become, both in the air and in the ground, an intolerable nuisance in the down town streets, and which the Metropolitan papers have earnestly insisted that the city should remove by building subterranean viaducts of enormous cost at its own expense.

7. It will provide for easy entrance and exit. And finally,

8. It will create a new sub-surface street and new sidewalks, with twenty-five miles of new stores and pleasant basements, and by removing trucks and omnibuses from the present surface of Broadway, leaving it free for carriages on a dry and firm pavement, will make it the most beautiful avenue in the world.

We end with the question which stands at the head of this article and which must be answered now, "*Tunnel or Arcade—which?*"

1881-82-83.

PURCHASE OF THE BEACH PNEUMATIC CHARTER; LEGISLATIVE ACTION, LEGAL PROCEEDINGS, AND REORGANIZATION OF THE COMPANY.

New York Record and Guide, June 11, 1881.

It seems the famous Arcade scheme is to be revived. Melville C. Smith, its originator, sometime since secured the charter of the Beach Pneumatic Tube through Broadway, and has had that document amended by the Legislature.

If Mr. Smith can carry out his programme, we will have an underground Broadway 80 feet wide, lighted by day with patent lights and at night with the electric light capable of accommodating through and way trains, and which would connect the Forty-second street depot with the Battery. If carried out *it will make Broadway the most valuable thoroughfare in the world*, for the hotels and great stores will cluster on the street which has a monopoly of delivering goods and passengers from steam cars at their basement steps.

This enterprise must not be confounded with the Central Underground road. The last has been on foot for a great many years, and every few months the daily press tells the wonderful things it is going to do, but so far all its performances have been in the newspapers.

New York World, June 7, 1881.

The bill extending the charter of the underground road, which, as our Albany dispatches announce, has been signed by the Governor, is extremely timely as well as very important. It becomes law at a time when it is demonstrated that New York needs a much more comprehensive and efficient system of rapid transit than is likely to be provided by the elevated roads or by any extension of them. *Rapid transit New York must and will have.*

New York World, June 10, 1881.

The Broadway Underground Extension Bill.

On a careful examination of the bill signed by Governor Cornell on Saturday night last, it turns out that it is simply an extension of the powers, with a change in the name, of the Beach Pneumatic Transit Company, the charter of which company is *the only charter ever enacted covering the Broadway route*. It follows from this that the bill has no connection whatever with the old Central Underground road.

The law just signed by the Governor is reported to be the result of a combination between Mr. Melville C. Smith and others of the famous Arcade Railroad scheme, and Mr. Dixon and others of the original Beach Pneumatic scheme. Be this as it may, the one thing certain is that the bill involves only an independent project, the authors of which under it seems to have acquired rights and to have a purpose which encourages New York to expect at last the long-looked-for boon of safe and complete rapid transit.

New York Tribune, March 28, 1882.

Controlling an Underground Line.

Governor Cornell signed an act on June 4, 1881, extending the charter of the Beach Pneumatic, now known as the Broadway Underground Railway. The chief reason why the Broadway Underground road has taken no steps toward building has been revealed in a suit before Judge Arnonx, in the Superior Court, which was brought to a close on Monday.

New York Evening Telegram, March 28, 1882.**Another of Joseph Dixon's Suits Dismissed by Judge Russell.**

Following close upon the decision of Judge Arnoux, published in yesterday's *Telegram*, in the suit of Joseph Dixon against Cummings and other trustees of the Broadway Underground Railway Company, is a decision rendered by Judge Russell.

New York Evening Telegram, June 3, 1882.**Making the most of Broadway.**

Simultaneously with the passage in the Legislature of a bill devoting the surface of Broadway to uses of an old-fashioned street railway, a bond is filed in the Comptroller's office to guarantee the completion of the Broadway tunnel enterprise. The time at length has passed when personal feelings or sentimental considerations as to the symmetry of Broadway could interdict what must be regarded as a public necessity. Experience has proved that the traffic of the primitive street car can never be superseded or materially impaired by such improvements in the mode of locomotion as the elevated tramway or the subterranean bore. Experience has also proved that whatever appliance is calculated to facilitate the transit of the inhabitants and frequenters of this metropolis, is destined to make the buildings on its Broadway higher and more resplendent, to make the quotations for its lineal feet all the more fabulous, and to lighten the general burden of taxation. Broadway thus fulfils its destiny and takes its place in the general march of metropolitan development.

New York Times, Jan. 2, 1883.**The Underground Railroad.**

A decision was handed down by Judge Daniels in Special Term of the Supreme Court, yesterday, in the matter of the petition of Joseph Dixon to set aside an election of Trustees for the corporation known as the Broadway Underground Railroad Company. Judge Daniels denied the application to set aside the election, stating that the present Board of Trustees were lawfully elected.

New York Record and Guide, Feb. 3, 1883.**The Broadway Underground Railroad—Legal Obstacles Removed.**

An order has been entered by the Supreme Court, through Mr. Justice Daniels, declaring

the acting Board of Trustees, of which Melville C. Smith is president, the legal board of The Broadway Underground Railway Company, and requiring Joseph Dixon and others to deliver to the present officers of the company all books and papers now in their possession, and restraining them from attempting to act in any way pertaining to said company.

The Broadway Underground Railway Company is the successor of the "Beach Pneumatic," which recently secured an extension of its charter by act of the Legislature, which covers the right to build a railway under Broadway and Madison avenue.

Mr. Dixon has claimed certain rights based on certain stock alleged to have been issued in purchase of the Pneumatic franchise, and without any money being paid therefor. Mr. Smith and the other owners being advised by counsel that said stock was illegal and worthless, authorized the issue of new stock at par, a large amount of which was subscribed for, and ten per cent. of the same paid in in cash. Mr. Dixon refused to subscribe or to join in this action.

This decision, in favor of the present trustees of the company, is the last of some half dozen suits which were brought by Mr. Dixon and based mainly on this alleged worthless stock, all of which have been decided adverse to Mr. Dixon. The action of the present trustees having been sustained from the beginning by the courts, the company at once employed engineers who have been actively engaged perfecting maps and plans. It may be reasonably hoped that now all things pertaining to this great enterprise will be pushed with additional rapidity and vigor.

New York Times, March 5, 1883.**Rapid Transit Projects.**

The adverse report of Commissioners Bosworth, O'Brien and Holmes, on the application of the Broadway Underground Connecting Railway Company for leave to construct a tunnel railroad under Broadway, has revived the interest in underground rapid transit for this city, and, in the minds of people who are not acquainted with the facts, has lessened the prospect of any increase whatever of our rapid transit facilities in the future. In truth, however, this report of the commission is of very little importance, and, had it been favorable instead of adverse, it would have been of no

practical value in promoting the construction of an underground railroad by the company that made the application, for the reason that the Broadway Underground Connecting Railway Company, so called, *never had any legal rights under Broadway*, and on this account if on no other, could never have raised the money to build the road. The company is the offshoot of the old Central Underground Railway Company, which once had a charter from the Legislature, but, like many other charters for quick transit, it came to nought from lack of ability on the part of the company to raise funds to build the road. It is a legal question whether *the charter has not lapsed* long since, but, whether it has or not, it never gave the company a right of way under Broadway; *it did not even touch Broadway, or any part of it*, but the route lay through City Hall place, Mulberry street, across blocks to Lafayette place, thence to Fourth avenue, thence through blocks to Twenty-third street, and thence through Madison avenue to the Harlem River. Its right to change its route to Broadway was claimed to be derived from the provisions of the Hudson River Tunnel bill, which passed the Legislature long after the Central Underground charter, and which those who passed it never dreamed was to be used for this purpose. *Whether a forced construction of this tunnel bill would permit underground railroads to be built all over New York, as some have claimed, may be a question for lawyers, but, so far as Broadway is concerned, all such privileges are cut off by another charter that passed the Legislature, granting the specific right to run under Broadway from the Battery to Madison Square, with branches extending farther up Broadway to its junction with Eighth avenue, and up Madison avenue to Harlem River. This charter is still alive and valid, having got an extension signed by Gov. Cornell as late as 1881.* The company now organized under this charter is called the Broadway Underground Railway Company, Melville C. Smith, President, and has offices in the Boreel Building, where, for the last eight months, it has had half a dozen engineers at work drawing maps and plans preparatory to the construction of its road. It has had no occasion to apply to the court for a commission to determine whether it ought to be allowed to build a road under Broadway, for it already has that right from the Legislature. Its legal and financial status, with a full description of the kind of an underground road which it proposes to build, was published in The Times on June

26th last, and since that time the company has been steadily at work perfecting its plans.

A reporter of the *Times* called at the office of the President of the company on Saturday to learn what, if anything, he had to say about the report of the Commissioners denying the application of the rival company. In response to the inquiry Mr. Smith said that the company of which he was President had taken very little interest in the commission, knowing that its decision, whatever it might be, could have no practical result; "but since the report was published," said he, "we have had it forced on our attention, and it has occasioned us annoyance by people running in to inquire if the decision of the Commissioners would put a stop to our enterprise. The similarity of the names of the companies has misled people, and many have thought that the commission was appointed on our application, and that the adverse decision might put an end to any railroad under Broadway. I have read the report of the Commissioners very carefully, and I must say that it is a sensible report, and I am glad it was made and published. It contains sound arguments against the kind of road that the Broadway Underground Connecting Railway Company, so called, proposed to build, or against any tunnel road, in fact. *They are the same arguments that I have urged and tried to impress upon the public ever since I first projected the Arcade plan of a road under Broadway.* I fully concur with the Commissioners that such a road, simply intended to 'whisk' people through a dark hole from the lower end of New York up into Westchester county, would be of doubtful utility to the traveling public, of no advantage whatever to the city or to property-owners on the route, that it would not compensate for the inconvenience attending its construction, and that it ought not to be built. This company does not propose to build any such road if it can avoid it, and if the Commissioners who made that report will call at this office and examine our plan of a road under Broadway they will find nearly all the objections in their report fully answered, and, although we are in no way dependent on their opinion, I would almost be willing, after such an examination, to submit to their decision whether our road ought to be built or not. It is true, as the Commissioners suggest, that a road which is to cause inconvenience and possible damage to property-owners in its construction, ought to provide some compensating benefits, and that the city is also entitled to derive some advantage from the franchise, if it be of any value. The

road we propose to build will amply fulfill both of these conditions. For the property-owners on its line it will add at least one-third to the value of their property, while to the city it will provide another Broadway scarcely less valuable and important than the one it now has. It will duplicate the capacity for business and travel on that thoroughfare, and provide a road-bed that need never be torn up or disturbed until it is worn out, and which will be far superior to any road-bed the street ever had. It will also provide a vault or conduit in which the water-mains, gas-pipes, etc., can all be placed, and where they will be accessible for repairs without disturbing the street. This is an improvement that all admit will have to be made sooner or later, and which the city would be compelled to make at a very heavy expense to taxpayers, *and with almost as great inconvenience to travel as would result from the building of our road.* * * * * *

We propose, in a word, to make a new Broadway under the present one, with ample sidewalks, with four tracks for passenger and freight traffic (*the freight to be carried in the night*) and with a safe and accessible conduit for the pipes of all kinds that are now rusting and corroding in the dirt under Broadway. We could build, for half the money that our plan will cost us, a tunnel road of the kind rejected by the commission, but we agree with the Commissioners that such a road ought not to be built. We maintain that any scheme for additional rapid transit in this city should be far-reaching in its design and of capacity sufficient to meet all future requirements of the city. We also recognize the fact that it should not encroach upon the rights of private property-owners or be built at their expense. Accordingly we have adopted a plan that will benefit instead of injure private property; that will save the city incalculable expense in the future; that will provide the public with safe, easy and rapid transit from one end of the city to the other, and that will make Broadway, in which all New Yorkers take pride, the finest thoroughfare in the world. * * * * *

In order to enable us to carry out all the details of our plan, as now perfected, our lawyers think we will need a slight modification of our charter. We intend to apply to the present Legislature for such modification, and trust we will receive the support of the public and the press in our application. If we cannot get it we shall go on and build the best road that we can under the provisions of our present charter."

New York Evening Post, March 28, 1883.

The Proposed Arcade Railroad—Some Features of the Plans—Statements of Melville C. Smith.

Despatches from Albany announce that the Assembly Committee on Cities is giving favorable consideration to the bill modifying the charter of the Broadway Underground Railroad Company, so as to permit the construction of the road on the Arcade plan. In view of this fact a reporter of the EVENING POST to-day asked some questions of Mr. Melville C. Smith, the President of the company, which has offices in the Boreel Building. Mr. Smith said that the company still adhered to the claim that it had a full legal right to begin the construction of a tunnel road under Broadway at any time, under its present charter, which is the amended charter of the old "Beach Pneumatic Tunnel." It much preferred, however, to build an arcade road, and that was the only kind of an underground railroad with which he was willing to be connected. If authority to build such a road was refused, he would sell out his interest in the matter to the men who wanted to build a two-track tunnel. Such a tunnel would be simply an enlarged woodchuck's hole, through which people could be whisked up to Westchester county. It would be of no benefit to Broadway property, but an injury, and if he was an owner of such property he would make haste to sell it, in case such a road was determined upon. On the other hand, he would gladly join a syndicate to buy Broadway property, if an underground road was constructed on the Arcade system.

New York Herald, April 15, 1883.

The Underground Railway Bill.

There is no doubt that the proposed Broadway Underground Railroad will confer decided benefits upon the New York public, if in framing the necessary bill the Legislature restrains its inclination to insert, for the benefit of political schemers, certain reprehensible clauses, and if it properly guards public and private interests connected with the proposed road.

New York Times, April 18, 1883.

The bill extending the franchises of the Broadway Underground Railway Company passed the Assembly yesterday. It authorizes the Arcade plan for the construction of its

line. It is a fascinating idea, that of a well-ventilated and well-lighted basement story to Broadway, in which there should be four railroad tracks for express, way, and freight trains propelled without steam locomotives, sidewalks for pedestrians, and accessible vaults for all the underground pipes. * * *

New York Evening Post, April 18, 1883.

The Broadway Arcade Railroad bill, which passed the Assembly yesterday, provides for the construction of an underground passageway from the Battery to Harlem River under Broadway and Madison Avenue. The plan was described in our columns so recently that it need not be again set forth in detail. While the bill may be defective in not securing to the city a percentage of the gross receipts, and in other particulars, we think that the conviction is general that an underground system of communication between the northern and southern extremities of the Manhattan Island will soon be a necessity, and that if capitalists can be found who are willing to embark in a venture of such magnitude, they ought not to be met in a churlish spirit. The incidental advantages of a subway along the proposed route, for the conveyance of pipes, tubes, wires, and sewers will be second only to those attained by a new mode of rapid transit for persons and property.

New York Star, April 18, 1883.

Anybody who watches the stream of vehicles continually passing up and down Broadway need not be informed that any plan which would relieve the perilous press of traffic, and at the same time furnish facilities for speedy travel without inflicting damage on contiguous property, should be welcomed as an undisguised blessing. These conditions, and more, the projectors of the Arcade Railway promise to fulfill. * * * * *

New York Times, April 19, 1883.

We have endeavored to obtain some expression of opinion from those interested in property and business along the line of Broadway regarding the project for an arcade railway beneath its surface. In most cases they appear to be opposed to it, but we are bound to say that they very generally show little knowl-

edge, or an entire misconception of the character of the project and what is claimed in its behalf. It can hardly be denied that if the thing were an accomplished fact it would afford great relief to the pressure on Broadway for transit purpose, and would add greatly to the value of property on that thoroughfare, but is it practicable? The projectors say that all the necessary capital is available, all the engineering difficulties have been considered and can be overcome, there will be absolutely no damage to property and no interruption to travel during construction, and a multitude of advantages will be secured. Suppose the business men take the trouble to look into it carefully.

New York Sunday Mercury, April 22, 1883.

The Arcade Railroad

People have had another hearing before the Railroad Committee of the Senate and have made a favorable impression. The only opposition now seems to come from O. B. Potter, who is reported to have invested in the purchase of the old Central Underground charter, which proposed to lay a tunnel through Centre and Marion streets to Lexington avenue, raising the level of Centre street very considerably for nearly its entire length. As the Arcade road will have four times the capacity of any other rapid transit line, will bring passengers and freight from San Francisco to the Battery on its standard gauge, will create a new sub-surface street with twenty-five miles of new stores and basements, leave Broadway free for carriages, and will injure neither public nor private property, while it combines all the possible conditions of safety and speed, and inasmuch as it can be constructed without interruption to travel, it is believed that it will be approved by the Senate and the Governor as the most feasible and permanent solution of the problem of real rapid transit in New York.

New York Sunday Mercury, April 29, 1883.

The New Rapid Transit Scheme.

As predicted by the MERCURY, the Assembly gave its approving vote to the Underground Railroad bill, which permits the corporation, already chartered by act of Legislature, to change its tunnel plan to a scheme which proposes a street under Broadway, with ample sidewalks, light and ventilation, four tracks in the centre and vaults beneath for sewers, gas

and water-pipes and telegraph wires. As it does not create a corporation or bestow privileges, but merely modifies privileges already granted, the question of franchise could not enter into the discussion.

New York Record and Guide, May 26, 1883.

The Broadway Underground Railway.

The Legislature adjourned without passing the amendments to the charter of the Broadway Underground road which its projectors thought were needed, there has been some curiosity expressed as to what the company would now do. Some light is thrown upon this by the following interview with the president, Mr. Melville C. Smith :

"What effect will the failure to obtain amendments to your charter by the recent Legislature have upon the railway project of your company?"

Mr. Smith : "It will make no material difference, I think, as to the final result.

"Then you are not at all discouraged by the action of the Legislature?"

Mr. Smith : "We are not, nor particularly disappointed even. The facts are, that the various suits brought against us by the parties holding worthless stock, for which the company had never received any money equivalent, were not fully determined in our favor until March, leaving us free from debts and legal difficulties. The legislative session was then so far advanced that we were in doubt whether to introduce the bill, and were only able to do so in time to prevent a single objection keeping it from being advanced on the legislative record. Of course we had no time to explain the details of our arcade plan to members of the press, and thus reach and inform the public of the nature of the changes which we desired to make. We felt confident that these, if understood, would be favored not only by the owners of property along the line of our road but by the public generally. Considering the circumstances, the proposed change from a tunnel to an arcade railway was received with unexpected and, so far as understood, universal approval.

"Then you expect to determine upon a plan of action soon, and in any event build the road?"

Mr. Smith : "Certainly we do! We shall build a road under Broadway, *and if aided by an intelligent public opinion, will enlarge and improve our plan so as to embrace every*

element of utility and beauty, thus affording New York better accommodations for its trade and travel than are enjoyed by any city in the world.

New York Herald, Oct. 10, 1883.

Broadway Underground Railway.

The stockholders of the Broadway Underground Railway Company held an annual meeting yesterday at the offices of the company, in the Boreel Building, and elected the following Board of Directors to serve for the ensuing year: Ex-Secretary Wm. Windom, ex-United States Treasurer Jas. Gilfillan, Melville C. Smith, Jerome Fassler, H. C. Gardiner and Jno. Cummins. Later the directors organized by electing Mr. Smith president, Mr. Windom vice-president, Mr. Gilfillan, treasurer and Mr. Cummins, secretary. President Smith said that the company had its maps and plans all perfected for a four-track road under Broadway from the Battery to Westchester county. About nine feet more in width will be needed to carry out the present plan. The franchises of all rival companies have been bought or merged. He had spent the summer in London, studying the underground system there with two engineers, whom he took with him. Mr. William J. McAlpine, the well-known engineer, had just been sent over to make a thorough investigation of the London system.

New York Tribune, Dec. 10, 1883.

A Talk About the Broadway Arcade—President M. C. Smith Encouraged by his study of the London Underground Road.

Sitting in his office in the Boreel building on Saturday, Melville C. Smith, president of the Broadway Underground Railway Company, chatted with a *Tribune* reporter regarding his recent visit to Europe.

"We found from our investigations," said Mr. Smith, "that we could hereafter easily meet the objections urged against an underground road in Broadway. For instance, one of them most frequently made is the effect of vibrations upon the foundations of adjacent buildings. In London the underground roads cover a circuit of some twenty miles, and of course they had to contend with all sorts of obstacles and obstructions. The road passes under streets, squares, blocks of buildings, churches, immense breweries filled with grain, and in one case directly under a monument

weighing nearly 200 tons, the result being, as the chief engineer said to me, 'our road extends some twenty miles, has been in operation nearly a score of years, and we have not injured the wall of any building, nor had to pay a dollar damages.' It has been shown by indisputable proofs, by tests with quicksilver placed in the second story of buildings, that the jar and vibration from trains of cars running on the earth are less than are produced by an ordinary vehicle running over the street pavement. As the proposed arcade railway would not run within eighteen feet of any building—there being first the width of the sidewalk, eighteen feet—and then the way track for slow trains, the centre of the street only being used for rapid transit—it will readily be seen that there could not be the least possible disturbance or danger to the adjacent buildings.

"Now, as to the strength of our structure," continued Mr. Smith, "the width of Broadway is 80 feet, and in one place we had contemplated a row of iron columns in the centre of the street. In London, roadways, public squares and even heavy buildings are supported by cast iron girders, and in many instances the span exceeds 50 feet. As the result of our examinations there, our engineers are of the opinion that their previous estimates for the sustaining power of the iron work have been considerably

greater than necessary, and that the center tier of columns will not be required.

"The depression at Canal street, which is frequently spoken of, cannot compare with like difficulties in London. At Canal street it is 11 feet 8 inches to high-water mark, while the entire depth of the Arcade would be less than 18 feet. The depression in Broadway is short, while in London the road is constructed for long distances more than 20 feet below the river Thames. High grades on the London road are quite frequent, and in some instances they are one foot in forty feet—far greater than any grades on our road.

"They claim to run at the rate of about twenty-five miles an hour on the London underground road, but they have to make frequent stops, as they accommodate way and through travel on the same track. The Arcade road will provide perfect accommodation for way travel; the depots on the track for through travel will be about a mile apart, and the trains will make thirty miles per hour. As this is much more than twice the rate of speed of which the elevated roads are capable, and as eight cars or more to a train can be drawn on the solid ground, while the air-roads never have more than four, it would make the capacity of a single track on the Arcade more than four of the elevated."

1884.

WORK ACCOMPLISHED BY THE COMPANY, AND LEGISLATIVE PROCEEDINGS.

New York Sun, January 24, 1884.

Compared with London's Tunnels—President Smith thinks the Broadway Arcade will be very easily built.

There are very few horizontal holes in the earth which cannot be found pictured and diagrammed in the offices of the Broadway Underground Railway Company in the Boreel building. The exceptions are those which were not made by the hand of man, and may be the catacombs and a few other subterranean works of an early date. President Smith, Chief Engineer McAlpine, and others connected with the company visited the Old World a few months ago, and they brought back maps upon maps of underground London and Paris. President Smith is an enthusiast, and if it occurs to him that he can learn something by floating through the sewers of Paris that will be of service to him in building a railroad under Broadway, off he goes to Paris and down into its sewers. "The more I see of other works," he said yesterday, "the more I am in favor not of tunneling Broadway, but of building the Arcade railway in that thoroughfare. I would rather build the *Arcade* and leave Broadway at its completion the most splendid thoroughfare in the world, though I should not gain a cent of profit, than to construct a *tunnel* under that street.

In a report just submitted to the company, Engineer McAlpine says that the London underground railway, known as the "Inner Circle," a loop inclosing about seven square miles in the heart of the British metropolis, is constructed beneath the foundations of buildings for more than two-thirds of its length, while the proposed Arcade railway is to be in no part under any building; that in London the sewers and other obstacles encountered added greatly to the difficulty of the work, while there are no continuous sewers in Broadway; that the grades of the London road are very undulating, while those in this city will

be very slight, and that he has come upon many other facts and details concerning the construction of the London underground roads which cover, in a practical way, obstacles and objections of a far more difficult character than any which will be encountered in the railway under Broadway.

One of the colored plates made in London shows the details of the construction of the road where it runs beneath a monument which weighs 180 tons. The heavy shaft now stands on the arched roof of the railway tunnel.

"The 'Inner Circle' in London," said President Smith, "is such a tunnel as we would have if we were to run our road under this building, across Broadway, in a loop beneath the big buildings of lower New York and back to this point, a dozen miles in all. The obstacles to be overcome here are not to be compared with those which have been overcome there. The cost here will be light compared with the cost there."

New York Times, Feb. 25, 1884.

Subways and Rapid Transit.

The bill extending the charter of the underground railway, as introduced into the Assembly on Thursday, has one good feature. *It provides that the tunnel for traffic shall be arranged so as also to take the sewer, gas mains and water pipes.* The construction of subways especially for this purpose, would, of course, be more costly than the incidental use of tunnels constructed for another purpose. Nevertheless, if all the systems of subterranean communication were grouped, it would, we believe, be found that the annual cost of laying and repairing, now made necessary by their inaccessibility, would pay a reasonable interest on the prime cost of special subways. At any rate, the rents of subways should be made to pay interest on their cost, and the surface of the streets which they traverse should be kept

inviolable. As an adjunct to an underground road the subway would be a source of almost clear profit, and to this profit the city, at the expense of which it is proposed that the franchise for construction shall be given, is fairly entitled.

N. Y. Record and Guide, March 1, 1884.

The New York Arcade Railway.

The bill now before the Legislature empowering the construction of an Arcade road under Broadway instead of a tunnel, is of the first importance to owners of property on that great thoroughfare, as well as to the entire population of New York city. We present our readers this week with the report of Chief Engineer William J. McAlpine, in which an exhaustive comparison is made between the proposed Arcade road and the underground railways of London. From this it will be seen that the engineering difficulties presented by the former are not by any means as great as those encountered in the English capital. The value of the Arcade road to New York cannot be over estimated. * * *

The experience of the past has invariably shown that wherever the greatest facilities for transportation exist, there trade concentrates and property increases in value, and when the Arcade road is built, such a centralization of business will follow on its track as to make the real estate through which it runs incomparably more valuable than at present.

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There is but one barrier to the accomplishment of the more perfect road, and that is a modification of the charter granted in 1881 authorizing the building of a tunnel, so as to permit of its construction on the Arcade plan. Broadway is now crowded with drays, carts and vehicles of every description, making it impassable at most parts of the day. Besides, rapid transit is urgently required, so that the tens of thousands who travel daily to and from all parts of Broadway and the city should be able to do so expeditiously. It is absolutely necessary, therefore, that some relief should soon be afforded by a cable, elevated or underground railway. It is contended that the first would probably be too dangerous to life and not give sufficient speed, while the second is objectionable and ruinous. There is only the one road left, and it is for the people of this city to pronounce whether this shall be a dark, stuffy tunnel, which will scarcely supercede the requirements of a single genera-

tion, or a handsome, light, airy Arcade, which shall increase the value of the property on its route, and afford transportation facilities for passengers and freight of almost unlimited capacity. The press of New York city has over and over spoken favorably of this magnificent enterprise which will make Broadway the greatest street in the world, and there can be no doubt of the verdict of the people. Should the Legislature fail to authorize the arcade plan, there will be nothing left for the company but to reluctantly proceed with the tunnel. It is imperatively necessary therefore, that the press of this city and the property owners interested should see to it that New York shall receive the advantage of an Arcade railway which will increase the value of realty and give New York a road unequaled in history, instead of a tunnel which will neither enhance the value of property along its route nor permanently meet the wants of our great and ever-growing metropolis.

New York Evening Post, March 3, 1884.

The Broadway Railway Project.

The President of the Broadway Underground Railway Company, Mr. Melville C. Smith, has sent a circular letter to the owners and lessees of property on Broadway. In his letter he says:

"The tunnel road now authorized by law, and which, if other provisions are not made, will assuredly be built, would mainly serve the business interests at the lower end of the island, and the far off residences at the upper extreme, and thus Broadway would be largely given over, not to say sacrificed, to drays, carts, and other obstructive vehicles, which now gorge its surface, and to lightning trains underneath; and neither this kind of travel on the upper street, nor the tunnel below, used to whisk people to and from Westchester county, would contribute in any material degree to the value of Broadway property.

"The Arcade Railway, on the contrary, would duplicate Broadway with a sub-surface street, well lighted and ventilated: would change the dark cellars into basement stores, fronting on pleasant sidewalks; would provide vaults, ample and accessible for all pipes and wires, thus avoiding the necessity of tearing up the street; would have four tracks—two for way and two for through travel—and during night two of these tracks may be devoted exclusively to freight and express, which could be conveniently distributed anywhere along the route.

"This company has the undisputed right, by

special charter confirmed by the Legislature of 1881, to build a tunnel road under Broadway; its bond required by law has been accepted by the city, and we are prepared and shall construct the Tunnel road as authorized, unless the Legislature, in its wisdom, shall substitute the far better plan of the Arcade."

New York Times, March 9, 1884.

Local Transit.

There is pressing need of additional facilities for local transit in this city. Perhaps the most conspicuous need is means of real rapid transit from the lower to the upper end of the city. This has not yet been secured. Owing to the shape of the city this distance is a very long one, and means should be provided for traversing it at the highest practicable rate of speed for what may be called through travel. The elevated railroads do not furnish rapid transit in any proper sense of the term. The speed of their trains does not at any time exceed twelve miles an hour, and in the busiest hours of the day it is much less than that. Moreover, the station platforms and cars are so crowded at these times as to make them both uncomfortable and perilous, and often to prevent passengers from securing prompt accommodation.

The project which gives most promise of real rapid transit is that which proposes an underground line in Broadway on the Arcade plan. This contemplates separate tracks for through travel on which trains will be run at the rate of thirty miles an hour, with stopping places at the proper intervals, and other tracks for way trains, with more frequent stops. It proposes also to provide underground sidewalks and facilities for placing pipes, wires, &c., where they will be accessible without disturbing the street surface. If the company obtains the privileges for which it is asking, care should be taken to provide all proper guarantees as to its financial stability, the practicability of its plans, and the security of public and private rights in the carrying out its scheme.

New York Times, March 20, 1884.

The Arcade Railway.

ALBANY, N. Y., March 19.—A final hearing on the Broadway Arcade Railroad bill was had this evening before the joint Railroad Committees of the two houses. Alvah P. Mann, E. S. Jaffrey, S. V. R. Cruger, and one or two other

gentlemen representing the Trinity Church Corporation and other property-owners on Broadway appeared in opposition to the bill. Their opposition was directed to the practicability of the scheme, both in an engineering point of view and financially, and to the great injury they believed it would inflict on Broadway property owners, and the delay and inconvenience it would cause to traffic and travel on the street. A large part of their arguments displayed such ignorance of the details of the scheme they were opposing that they had very little effect on the committee, and were easily refuted by a few plain facts stated by Mr. McAlpine, the engineer, and by Mr. Post, the architect.

Mr. M. C. Smith, the President of the Arcade Company, addressed the committee at considerable length in reply to the opposition, and said if the Trinity Church Corporation and any owners of Broadway property had only accepted the invitation often extended to them to step into the office of the Company in the Boreel building and examine the Arcade scheme, instead of sending lawyers 150 miles to Albany to display their ignorance of the whole enterprise, they would have shown better judgment, and would have saved the committee much valuable time. The committee will undoubtedly report the bill favorably in both houses, and the report will be nearly unanimous.

New York Daily Graphic, March 26, 1884.

Progress of the Arcade Railroad Project at Albany.

As between the Arcade and the tunnel road (which the Broadway Underground Railroad Company has a right to build) public sentiment seems to be crystalized permanently in favor of the arcade plan, as proposed to be carried out. At the hearing before the Joint Railway Committee of the Legislature on Wednesday, the opposition was weaker than ever before known, and made no headway. The *Real Estate Record* of yesterday, speaking of the hearing at Albany, says:

President Smith, of the Arcade Company, gave the objectors the names of the principal men connected with the enterprise, showing that it was no chimerical concern, and also presented numerous letters from large property holders on Broadway in favor of the project, while Engineer McAlpine and Architect Post explained the methods by which it was proposed to construct the road, and demonstrated that neither the Trinity Church steeple

nor the walls and foundations of a single building on Broadway would be disturbed or affected by. As to the pipes and sewers, plans for their regulation and replacement, where they could in the future be repaired without tearing up the street, were presented. It was shown that in building the underground railroad in London not only was the road built under some of the largest buildings, but constructed under one of the largest monuments there without disturbing it or the foundations of the buildings in the least. The hearing was largely attended, and the opponents learned something of the possibilities of modern engineering, while the members of the committee congratulated the promoters of the Arcade road on their complete and satisfactory answer to all objections raised.

In another column of to-day's *Graphic* will be found a notice to Broadway property owners in relation to the above.

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To Broadway Property Owners.*

It would seem that certain owners of property on Broadway are opposed to the construction of the Arcade Railway. The arguments advanced by them, so far as they have been made public, are the same as advanced by their lawyers before the joint committee of the Legislature, based upon misapprehension or misrepresentations. Therefore *we invite all owners of Broadway property to call at our office in the Boreel building, examine the enterprise, and thus learn the actual facts.* If they will do this we are confident we can convince them, as we have already convinced many of the largest owners, that the Arcade, besides being of immense benefit to the city and to the public generally, will also increase the value of their property one third.

MELVILLE C. SMITH,

President.

New York Times, March 26, 1884.

Means for Local Travel.

The General Surface Railroad bill was ordered to a third reading in the Senate yesterday with a number of amendments which improved its character. * * * *

With this bill enacted there will be no occasion for the scheme laid out by the Rapid

Transit Commission. For the most part it is a scheme for surface roads to be operated on the cable plan. This is not, in any proper sense of the term, a rapid transit system, for cars propelled by cable power move very little faster than those drawn by horses, and no rapid transit trains can be safely run on the surface. * * * *

But surface roads will not afford all the accommodation needed in addition to that given by the present elevated railroads. The latter do not meet the requirements of the city in the matter of real rapid transit. They have already been outgrown. At certain hours of the day they are crowded beyond their capacity to furnish proper accommodation, and over and above all that they can do there is need of means of communication between the lower and upper parts of the city at a really rapid rate. * * * *

But it is a question whether the present and growing needs of the city would not be better met by an underground system. The projectors of the Broadway Arcade do not yet despair of convincing the property-owners on that great thoroughfare that their interests as well as those of the general public will be served by carrying out that project. They claim that the objections heretofore made are based on misapprehensions, and they invite the fullest scrutiny of their plans. The undertaking should receive the most searching examination, reducing, so far as possible, to a certainty the results which would be involved in the construction and operation of the road. If it can be found feasible and consistent with all rights, and so guarded as to insure what it so confidently promises to the public, it would meet one very pressing need, that of rapid conveyance over long distances. The bill authorizing the company to proceed with its project was reported in the Senate yesterday, but before it is acted upon every objection should be patiently heard and carefully considered. Broadway property-owners have important rights, but their objections should be shown to be well founded before they are suffered to stand in the way of a public improvement which may prove of great value to them as well as the city.

New York Record and Guide, March 29, 1884.

The Opposition to the Arcade Railroad Bill.

The opponents of the bill to create an Arcade Railroad under Broadway have based their objections on very frail grounds. They argue

* This invitation has been repeatedly published, and is a standing one to all parties interested.

that that thoroughfare will be practically useless during the construction of the road, and there will be a serious interruption to traffic. They also object on the ground that the excavations may be dangerous to the buildings on either side of the street. It is clear from the character of the objections raised, that the opponents of the measure have given little or no consideration to the merits of the proposed road. In the first place there will be no obstacles to travel, as will be seen from the picture published in a recent issue of this paper showing the large iron bridge which will be placed over the street, over which passengers and traffic will pass and under which the work of construction will be proceeded with. These bridges, according to the engineer's report, will occupy the space in front of each building for about one month, and will cause little if any inconvenience to the occupants of the property or the public at large. Then the fear that the safety of the buildings will be endangered is ungrounded. The engineering difficulties can be easily overcome and are not by any means as great as those encountered in constructing the London tunnel. The statement that property on Broadway will be affected seems absurd in view of the fact that in the English capital the tunnel has been bored under the highest structures, including a monument weighing nearly two hundred tons, without the slightest oscillation being discernible, whereas the Arcade Road will only run beside the buildings and not under them. The plans have been thoughtfully laid out by skilled hands, and some of the most prominent engineers in the country have given the road their sanction, and think it of incalculable value to New York city. Besides it may be noted that the Arcade bill provides for commissioners to see that the road is constructed safely and well.

It is of course but natural that owners of realty should look askance on any measure which may be likely to affect their property. Real estate is very conservative and does not like change. Improvements have nearly always to be made in spite of the protests of large property owners and not with their support, and it is somewhat curious that the very men who less than a generation ago opposed some of our best public improvements have since become wealthy and have benefited most by the very measures they fought against, and among these figure some of the names of those who oppose the Arcade Road, which would probably double the value of their prop-

erty on Broadway within the next decade. These gentlemen may be conservative, but they can hardly be credited with being farsighted.

There is one thing which has characterized the promoters of the Arcade Road, and that is their willingness to give every information to the public about their plan. Railroad companies in the past have not been characterized by a desire to satisfy public opinion. They have been noted rather for what they conceal than what they disclose. The president of the Arcade Road has published in all the papers during the past week an invitation to property owners to call at the offices of the company and examine the enterprise and the plans of their engineers, so that they may be able to judge for themselves as to its merits. Mr. Samuel McElroy, engineer to the Astor estate, recently availed himself of this invitation, and expressed his satisfaction both as to the value and capacity of the proposed road.

Property owners will do well to bear in mind that the company has the right by charter to build a tunnel under Broadway. The question now is, not whether there shall or shall not be an Arcade road constructed, but which shall the company build—a tunnel or arcade? That the latter has incomparably greater advantages over the former is evident to the most unsophisticated. Is New York city to have a dark, smoky tunnel or a light, airy, well-ventilated arcade, where it will be a pleasure to promenade, and which will enable the cellars of every piece of property on Broadway to be converted into valuable stores? Were a canvass taken of our citizens, there can be no doubt that nine out of ten would favor the latter. The company states it will be forced to build this tunnel much against its inclination should the arcade plan not receive the sanction of the Legislature. *It is for the property owners and the public at large to see that New York city shall receive the best road, and that road is the Arcade.*

N. Y. Real Estate Chronicle, March 26, 1884.

It is curious how history repeats itself. The great property holders on Broadway have always opposed every improvement on that street. The late A. T. Stewart was always backed by the Enos, Astors, Crugers and other representatives of the great estates and corporations in his fights against surface and elevated railroads on Broadway. He succeeded, and the result

was the loss of the retail trade of the city to our great thoroughfare. Third, Sixth and Eighth avenues, and Fourteenth and Twenty-third streets now contain the great stores which an elevated road would have maintained in Broadway. It was these same interests, with the help of the Tweed ring, which induced John T. Hoffman to veto the Arcade road bill which passed the Legislature when he was Governor. In the protest against the revived Arcade project are exactly the same names—Mrs. A. T. Stewart and Judge Hilton, with the Enos and the Trinity Church corporation—who are as vociferous against this splendid and valuable improvement as they were against all previous efforts to increase the business on Broadway. It is strange that the experience of the past has no lesson for these Broadway Bourbons. They learn nothing and forget nothing.

New York Star, April 9, 1884.

Rapid Transit.

The elevated railroads have not solved the rapid transit problem in the metropolis, is a fact apparent to everybody. They are an advance upon the facilities afforded by the horse-car system, so far as they go; but when this much is said, praise of them is exhausted. The existing lines may be extended, but it is not likely that we should build any new parallel lines on the same plan.

The semblance of rapid transit which we now have makes connections that carry people into Connecticut or elsewhere outside of our county limits. It does not tend to locate them in the northern part of Manhattan Island or in the annexed portion of Westchester. Thus we keep crowding the tenement districts by shutting out our wage-earners from the region of cheap and healthful homes. At the same time we tax both New York proper and the Annexed District for grading, sewerage and other improvements that are not compensated by a suitable increase of population.

No scheme hereafter will deserve the name of rapid transit which will not provide for running fast trains from the Harlem River to the City Hall and the Battery in from twenty to twenty-five minutes, and which will not furnish ample radial connections from the terminus of the main line through the upper wards of the city. Nothing can be tolerated, either, which will obstruct the street surfaces. These limitations lead at once to the conclusion that the rapid transit problem on

Manhattan Island can be solved only in one of two ways, by an underground or by a viaduct railroad. The latter would be a road resting on a solid bed, running through the middle of blocks instead of on the thoroughfare, and carried over streets on arches of masonry. There are many plans for depressed roads, foremost among which is the Broadway Arcade project. Its authors propose not merely to tunnel Broadway, but to excavate beneath its surface a brand new street, thoroughly ventilated and lighted, affording room for a four-track road with sidewalks, besides convenient receptacles for water, sewer and gas-pipes and electric wires. The feasibility of the *Arcade* road is attested by such eminent engineers as Generals McClellan, Wright and Newton, W. J. McAlpine, E. L. Viele, J. W. Adams, C. H. Haswell and others.

New York Sun, April 11, 1884.

More Rapid Transit a Necessity.

The vigorous efforts which are now made to push forward the project or projects for building cable railroads in this city seem to get little support from the public. The citizens do not show any general interest in the enterprises, and for the very good reason that the roads would not give New York what it really wants—and that is additional facilities for rapid transit.

It having become plain that the elevated railroads are already getting overtaxed, it follows that the welfare of the city requires further means of rapid transit to be provided at an early day. Those roads carried about ninety-two millions of passengers in 1883, which was only a few years after they had been constructed; and at the rate New York is now growing the number of people who will want to get up and down town rapidly must greatly increase before new facilities can be ready, no matter how soon the preparations for furnishing them shall be begun.

For the new rapid transit will not be by elevated railroads. We already have as many of these as the city is likely to tolerate. There is no room for more; and at best the elevated roads seems to be only a temporary device. *As to the cable roads, it is absurd to talk of them as furnishing rapid transit.* So far as speed goes, they are not much better than the horse railroads.

The new rapid transit must be by underground or depressed roads, and those will take long to build. The city will be set back great-

ly unless such underground roads are provided in the course of a few years. Business has adjusted itself to the new means of communication, and the city has been built up since the opening of the elevated roads with reference to it. So soon, therefore, as any general inconvenience begins to be experienced because people cannot get up to the northern part of the city by steam railroads, the prosperity of New York will suffer a serious blow.

The new roads must be built, and the sooner they are started the better. The number of passengers now carried by the elevated railroads is small in comparison with that which will be seeking rapid transit ten or fifteen years from now. *Even at present the travel would be much greater if the facilities were what the city requires.*

More rapid transit has, therefore, become an imperative necessity.

N. Y. Real Estate Chronicle, April 16, 1884.

The Future of Broadway.

By general consent the great thoroughfare which commences at the Battery and runs along the centre of the island up to the Central Park, is destined to be the greatest business street in the world. Everything conspires to add to the wealth of the commercial establishments on that famous street. The emobling and enriching of Broadway has apparently recommenced at its very beginning, as witness the Produce, Field and Welles buildings, as well as the projected Standard Oil Company's building. Other exchanges will find it to their advantage to establish themselves on lower Broadway. Ten years hence the noble front opposite Bowling Green, lying between Whitehall and State streets, will probably be occupied by a structure worthy of the metropolis. A syndicate of English capitalists are trying to get possession of the Rector street block, with a view undoubtedly of putting thereon a building surpassing anything of the kind now in the city. It will be remembered, however, that Broadway continues up the west side of of the park and along the whole length of the Hudson River, passing through all the cities on its eastern banks. The Broadway of Saratoga is but a continuation of the Broadway of New York city. Once a post road, it is now the principal street of many cities, and the longest business and residence avenue in the world.

But our present concern is with the street as

it exists on New York Island. *Some time or other the Arcade plan will certainly be adopted, and when it is a marvelous addition will be made to the wealth and splendor of that great thoroughfare.* The Broadway which will be constructed under the present surface of the street *will connect with the railroad systems of the whole country.* The traveler from any part of the North American continent will then be able to take his ticket for the hotel on Broadway in which he intends to stay. He and his luggage will be carried to the very door of the lower entrance of the hostelry on the Arcade. *Goods of all kinds could be shipped to connect with the warehouse on Broadway.*

Of course some of the large property owners on Broadway have opposed this great scheme. *When did it ever happen that a really magnificent public improvement was not opposed by somebody?* Many New Yorkers recall the case of the old Stuyvesant farm on the east side of the city. For generations that family had been growing cabbages and garden truck to the few people who then lived below Canal street. When it was proposed to extend streets through this old farm, the wrath of the Stuyvesants was unbounded. It was to be their ruin. So they fought the proposed improvements with as much vigor as did Dame Partington when she tried to brush back the waves of the Atlantic with her broom. The descendants of these sturdy Dutchmen are to-day among our richest citizens because of the extension of those streets through the cabbage farm against their will.

The next generation saw the same fight repeated when A. T. Stewart and other large property holders on Broadway successfully opposed a surface or elevated road on that thoroughfare. The same Arcade scheme was endorsed by the Legislature, but Governor Hoffman vetoed it at the dictation of the Tweed ring. The result was that the trade which legitimately belonged to Broadway was driven away to Sixth, Eighth and Third avenues, and to Fourteenth and Twenty-third streets. *Broadway, below Fourteenth street, was injured to the amount of tens of millions of dollars by the act of its own perblind real estate owners.*

The same influence is at work to-day to oppose the Arcade, but we are glad to learn that many of those who were first inimical have now thought better of the matter and are examining the plans. The opponents of the measure are now becoming convinced that their property will increase in value instead of be-

ing depreciated. *This has been due to the fact that the promoters of the Arcade road have done everything possible to convince them of the value of the project and to educate them into seeing the great benefit to their property which will result from the construction of that road under Broadway.*

N. Y. Commercial Advertiser, April 19, 1884.

The Arcade Railway.

Looking at the Arcade Railway project without bias of any kind, and without other interest than that which we feel in everything affecting the welfare of the city, we find two or three points that should be kept in mind.

The geographical peculiarities of New York, and the usual distribution of population and business, render rapid transit a peremptory necessity here. In no other city on the continent is the need so imperative. It is obvious that our present means of quick intercommunication between the upper and lower parts of the town are utterly inadequate even now, and that with the continued increase of population and extension of territory they must grow steadily less and less sufficient.

Fuller means must be provided in some way, and but three ways present themselves as possible. We must build more elevated railways, or we must permit the use of steam on the surface, or we must burrow under ground. To build enough elevated roads to carry the increasing throngs of passengers will be simply to choke the city to death. To permit the rapid running of cars on the surface is manifestly out of the question, and there remains only the possibility of constructing a system of underground roads.

Sooner or later we shall have to resort to that system, and the Arcade Railway project is intended to be a beginning in that way.

New York Evening Post, April 18, 1884.

Status of the Arcade Railroad Bill.

ALBANY, April 18.—The Arcade Railroad project was taken up in the Senate to-day in a quiet and altogether rational way. There was no obtrusive lobby on hand, the only person interested who was present being ex-Governor Walker, the attorney for the company. Senator Otis spoke against and Senator Thomas, Chairman of the Railroad Committee, spoke at length for the bill. Mr. Robb says of this project, that while it is physically practicable he has not

been able yet to satisfy himself of its financial solidity. Without money to put the bill in action, in case it passes, he can see no harm to come of enacting it. The cost of building the road might be within computable bounds, but the possible damages to property which would undoubtedly be incurred, are incalculable. The bill has excellent standing in the Senate, and will very likely be passed by that branch.

New York Times, April 19, 1884.

The promoters of the Arcade Railway scheme have pursued the wise policy of furnishing members of the Legislature with all the information at their command bearing upon the feasibility, expediency and cost of the project. The result is that it has met with little opposition in the Senate, where it was yesterday ordered to a third reading. No one can doubt that if the plan were carried out it would be a magnificent thing for the city, and no one would be more benefited than the owners of property along the line of the proposed road. Notwithstanding its great cost it would also in all probability prove profitable.

New York World, April 23, 1884.

It appears that ex-Governor Butler is watching events at Albany, and especially the progress of the Arcade Underground Railroad bill. Mr. H. C. Gardiner received this morning the following letter from General Butler.

Boston, April 21, 1884.

MY DEAR SIR :—A mutual friend has been explaining to me your rapid transit scheme by means of an an Arcade road under Broadway, and so out to the country by the line diverging from Twenty-third street.

I am very much struck with the object of the enterprise, which is to give *the confined workingmen and tradesmen* employed in the lower parts of the city of New York means of reaching home expeditiously and cheaply, and at such a distance as will afford them light, air and space, at least during the hours of recreation and sleep.

Nothing could be done, it seems to me, in the city of New York which would so far benefit all classes of its people. It may be said, where is the capital to build such a road? When there is such a plethora of capital in this country that it even overflows our borders and seeks investment in Mexico, where investments

can never be certain because of its very foundation—stability of government—is wanting, and while New England and New York have more money invested, leaving out real estate, west of the Alleghanies than they have east thereof, and while money can be had for first-class investments at 3 and 4 per cent., it would seem impossible for such a road as you propose to fail for want of capital to build it, even if you depended upon this country alone, and there is a like plethora of capital in Europe.

BENJ. F. BUTLER.

New York Commercial Advertiser, April 25, 1884.

The vote of 22 to 8, by which the Broadway Arcade Railway bill passed the State Senate yesterday seems to indicate pretty clearly that investigation, discussion and reflection have resulted in winning favor for the measure. The necessity for better and larger means of rapid transit in this city is obvious to everybody who happens to be possessed, as Mr. Samuel Weller was, of a pair of eyes, that the sole available place for further rapid transit roads is underground.

The Sun, Friday May 2, 1884.

The Broadway Arcade Railroad bill, which had previously passed the Senate, went through the Assembly at the afternoon session, with only nine dissenting votes. * * * *

Under the provisions of the bill the company is to build a four-track road to carry freight and passengers; to construct temporary roads and bridges during the progress of the work, so that travel may not be interrupted; to replace sewers, gas and water pipes, and to lay sub-surface sidewalks. The vision that Mr. Littlejohn drew of the New York of the future, with trains whizzing along these sub-surface tracks at forty miles an hour, was too much for anybody to resist, and the bill went through with a momentum that nothing could check.

Buffalo Courier, Saturday May 3, 1884.

New York Arcade Railroad.

Just before the close of the session of the Assembly yesterday, the bill known as the New York Underground or Arcade railroad bill, was passed by the remarkable vote of 109 to 9. It now goes to the Governor, who will probably

approve of it. It is a great enterprise and ought to be entirely successful.

New York Record and Guide, May 3, 1884.

Governor Cleveland has a chance to win the good-will of all intelligent owners of realty in New York, by promptly signing the bill which has passed both branches of the Legislature by overwhelming majorities, amending the Broadway Underground Railroad act so as to permit of the construction of an Arcade road under the present surface of our greatest of thoroughfares. Only nine votes were recorded against the passage of the bill in the Assembly and eight in the Senate. Ex-Secretary of Treasury, Windom, telegraphs from London that the money will be in readiness for the construction of the road the moment the Governor signs the bill. Should it ever be completed New York will become the most important city of any capital in the world. It will be the terminus of every railway in the country. It will reduce the time of transit from the Battery to the upper boundary of the Twenty-fourth Ward to within thirty minutes. The through and way roads under the present surface of Broadway will have a capacity to transport 500,000,000 of people per annum. It will solve the problems of sewerage, water service, pneumatic tubes, telegraph and telephone wires, as well as gas, steam heating and the other subterranean necessities of our great city. Governor Hoffman vetoed a similar measure at the instance of the Tweed ring, bringing on himself deserved censure for all time. Governor Cleveland should see to it that this improvement, so important to the metropolis, be forever associated with the history of his administration.

New York Sun, May 3, 1884.

The Arcade Railroad.

The arcade project was first brought to the attention of the public about ten or fifteen years ago, and strenuous efforts were then made by its originators to get the Legislature to look upon it favorably. But at that time the chief property holders on Broadway, the late A. T. Stewart, for instance, were bitterly opposed to any sort of a Broadway railroad, and the Arcade project was for the moment defeated.

Since those days, however, the elevated railroads have been built, and it has been found that they benefit rather than harm trade on the streets through which they pass. They draw customers to the streets, and the stations speedily become active centers of business. However it may be with dwellings, the roads unquestionably serve the interests of the merchants along their line. The Sixth avenue and the Bowery have greatly gained, so far as trade goes, by the elevated railroads.

Meantime, Broadway, below Fourteenth street, has suffered from the withdrawal of retail trade to those thoroughfares. It has neither surface railroads nor elevated railroads. It has got to be a street aside from the great drift of travel up and down the island.

Property owners on Broadway, therefore, have become more favorably disposed to a railroad through that street. It is true that Mr. Astor and some other of the land owners are antagonistic to this particular Arcade scheme, but they must acknowledge that the facilities for transit through Broadway need to be increased; that the omnibuses do not satisfy the wishes of the public and of the business on Broadway.

Everybody understands, too, that rapid transit through the centre of the city is what we imperatively need. If we can get a sub-surface railroad along Broadway, it will be of inestimable advantage to the public, and greatly contribute to the growth and prosperity of New York.

We have found from experience that the existing elevated railroads are incapable of meeting the demand for rapid transit. They are now carrying about as many people during the commission hours as they are able to transport. Already the public justly complain of the delays and inconveniences to which they are subjected because of the crowds at the stations and the overloading of the trains. Nor can the capacity of the elevated railroads be much increased. It is proposed to lengthen the stations, so that the trains may be made up of more cars. But longer and heavier trains would require stronger and heavier locomotives, and already the engines exceed the stipulated weight. It is doubtful whether the elevated structure could stand any greater strain.

More facilities for rapid transit are therefore at once required, and the necessity for them will become more and more urgent. We need, too, something of a more permanent character than elevated railroads, which seem to many people only a makeshift. That is, we must have un-

derground roads, or sunken roads for steam travel.

On its face the Arcade scheme is the most attractive project for a sub-surface railroad which has ever been presented to us. The proposition is to construct under Broadway what will be practically another street, and along that to run four tracks for steam cars.

If the Arcade project is carried out, we shall for the first time have real and suitable and adequate rapid transit in New York.

New York Sunday Mercury, May 4, 1884.

A Hearing for the Arcade Railroad Bill before the Governor.

The opponents of the Broadway Underground Arcade Railroad Bill, which passed the Assembly last Thursday with only nine opposing votes, and which passed the Senate the week before with only eight votes in opposition, have asked a hearing before the Governor, and it will be held some day this week. Only a few of the property owners on that thoroughfare are fighting the measure, and this corporal's guard appears to be led by Congressman O. B. Potter, who is likewise the stalwart opponent of the new aqueduct and of the proposed new up-town parks. Mr. Potter has been using his Congressional frank to forward lithographed letters to all owners of property on Broadway, but thus far without much effect. One of these letters, sent to George S. Coe, president of the American Exchange Bank, and president of the National Banking Association, secured from that gentleman an earnest letter to the Legislature and the Governor in favor of the Arcade project, to which Mr. H. B. Claflin and ex-Collector Hiram Barney also subscribed. It has become known to property owners that some years ago Mr. Potter became interested in the Vandenberg Underground Road, and secured from that corporation the concession of a railway station on his property at Broadway and Eighth street, and had drawings made showing how his property would look as thus improved; and the knowledge of this fact has discounted the effect of Mr. Potter's opposition to the Arcade plan. It was only when another company proposed to lay its tracks in front of his property that Mr. Potter discovered that his neighbors might be injured! * * *

New York World, May 4, 1884.

It is claimed that the projected Arcade Railway, when finished, will have a capacity of a

million passengers a day; that its express trains will run from the City Hall to Harlem River in twenty minutes; that the progress of its construction will cause no interruption to travel or traffic, and no disturbance of the sewers, or the gas or water mains, which will be transferred to a subway under the tracks; that the road, instead of injuring Broadway property, will enormously increase its value by making the thoroughfare once more the chief artery of travel. If half of these claims are substantiated, the Arcade road will be a great institution indeed.

Syracuse Courier, May 9, 1884.

The Arcade Railroad.

The New York underground Arcade railroad bill is now in the hands of the Governor and awaits his signature. The fact that this measure passed both branches of the legislature with hardly a show of opposition, will, we presume, be duly taken into consideration by His Excellency in reaching his decision.

There is said to be ample capital ready for its successful prosecution and completion if the necessary legislation is granted.

New York Sunday Mercury, May 11, 1884.

The Governor and Rapid Transit.

Over thirteen thousand business men and property owners in this city have petitioned Governor Cleveland to sign the Arcade Railway bill, and yesterday he received over three hundred telegrams from owners of property on Broadway and its immediate vicinity to the same effect. The public and private necessities of the city imperatively demand increased means of rapid transit, and as the Legislature has just decided, by an overwhelming vote, that the Arcade plan is the best and the only one that has been offered, the Governor will no doubt affix his signature to the bill. The plan has now been before the public for seventeen years, has been fully investigated, and seems to meet with popular approval. It is endorsed by many of the largest business houses and most extensive real estate owners in the city, after a careful examination, and positive assurances have been given that the road will be built at once. In the city's urgent need of rapid transit, the duty of the Governor to sign the bill would seem to be imperative.

New York World, May 11, 1884.

The New Rapid Transit System.

The property-holders and their representatives who have been showing the Governor why he should veto the Arcade Railroad bill now in his hands, seem, like the player Queen in "Hamlet," to protest too much. Mr. John E. Develin, for instance, objects to the bill, because it is unconstitutional. But if so the road cannot be constructed and no damage can be done to the property owners. Mr. Edward S. Jaffray thinks the bill ought to be vetoed, because it is passed simply for speculative purposes, and without any intention to go on and build the road. But every railroad is for speculative purposes, and if this particular road is not to be built at all, why should the property owners trouble themselves about it? Mr. Orlando B. Potter objects to the approval of the bill, because the charter, or supposed charter of an underground Broadway railroad was once offered to him for \$1,000. Mr. Potter has only himself to blame that he did not buy the charter and so shut out all others from such an undertaking.

A tunnel road, or some other that can run on the solid ground or on solid masonry, is the only rapid transit which will eventually meet the wants of New York. The Elevated Roads are already insufficient. Before many years pass away they will be as much behind the public necessity as the horse cars were ten or twelve years ago. To-day, from the manner in which some of them are managed, they are only a pretense of rapid transit.

Whatever charter may be granted for a railroad in the city, the rights of individuals and the interests of the public ought to be properly guarded. If the Arcade bill fails in this respect it ought to be vetoed. But we need better rapid transit than we now have, *and if it is delayed until the whims and fears of property owners are satisfied and removed we shall never get it. Objections are made by one set of tax payers to every public improvement that is proposed. Individual interests must give way to the general good, and the Governor ought to decide the Arcade bill, like all others, on its merits.*

Times, Sunday, May 11, 1884.

Asking for the Arcade Road.

ALBANY, May 10.—The Executive Chamber has been flooded to-day with telegrams and petitions from property-owners, business associ-

ations, social, charitable and hygienic clubs and organizations, asking the Governor to sign the Arcade Railroad bill. Among the Broadway property-owners who ask for the bill are: William H. De Forrest, John Brower, Bayard Clark, the owners of the Shoe and Leather Bank, Gen. L. F. Appleby, the East River National Bank, the Equitable Life Assurance Society, the American Express Company, Henry M. Taber, Theodore Burgoyne, the American Exchange Bank, Austin G. Fox, V. K. Stevenson, Sidney De Kay, Elisha A. Packer, Hiram Barney, James Langdon Curtis, A. J. Baker, and C. V. Lydell.

All the prominent hotels on Broadway except three petition for the signature, and most of the theatres. Among other petitioners are Luther R. Marsh, W. M. Havemeyer, the Merchants' Insurance Company, the Hamilton Insurance Company, Jordan L. Mott, George S. Hart, Richard C. McCormick; Rowland, N. Hazard, W. L. McFarlane, W. N. Griswold, Chancey Vibbard, Nelson A. Cowdry, Latham & Co., Rogers, Peet & Co., Clausen & Price Brewing Company, the Merchants' Insurance Company, and citizens residents of New York to the number of 13,000, all of which have been obtained within the last four days. Several hundred members of the Produce Exchange have also asked the Governor to sign the bill. The impression is almost universal here that the bill will be signed.

New York World, May 14, 1884.

Governor Cleveland withholds his signature from the Arcade Railway bill. He thinks it isn't possible for the city to outgrow its rapid transit facilities.

New York Commercial Advertiser, May 14, 1884.

Grover Cleveland has vetoed the Arcade bill upon grounds that are mainly *technical, or precautionary*. These seem to him to suffice as indicating his duty. The need for further means of swift transit in the city, the need to relieve existing pressure and to forestall greater pressure that must quickly come, and to do

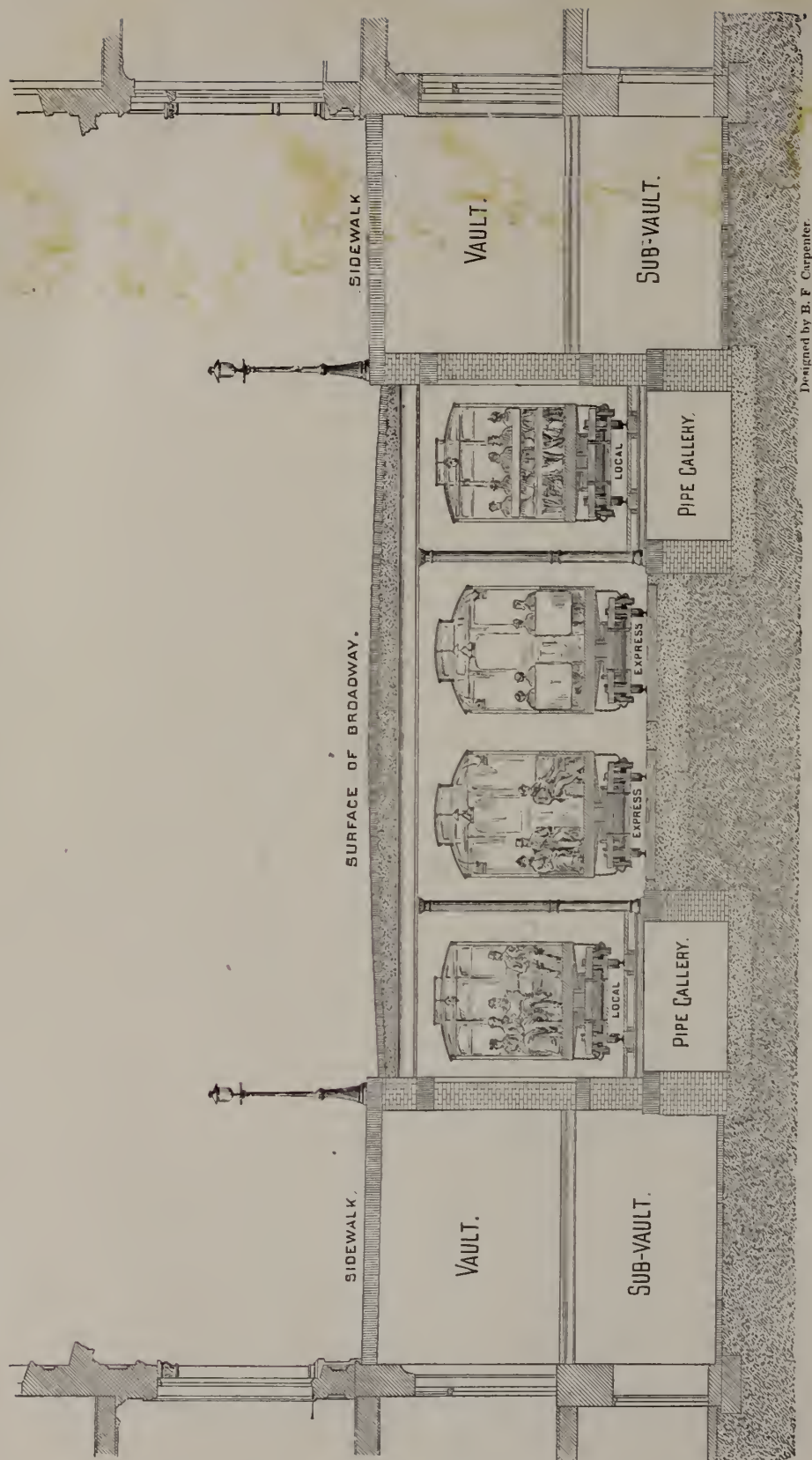
this without augmenting current and threatened embarrassments on the surfaces of streets and avenues is therefore for the time disregarded.

New York Commercial Advertiser, May 17, 1884.

The proposal to pass the Arcade Railroad bill over the Governor's veto was baffled by the illness of Judge Low and the eleventh-hour defection of a previously counted-on Senator. Some Democratic Senators, it is understood, who favored the bill were, however, opposed to antagonizing Governor Cleveland this year, since he is a possible candidate for President. We are, however, of opinion that no harm will be done by waiting in this matter for another session. Granting that the scheme is feasible, and that the objections to it can be fairly disposed of with due respect for the interests of both the public and property owners, the passage of time will only make these things more clear, while the increased pressure on existing facilities will furnish stronger argument to add to their number.

New York Times, May 17, 1884.

Arrangements had been made to pass the Arcade Railroad bill over the Governor's veto. A canvass of the two houses, made during the last two days, disclosed the fact that 23 Senators and 100 Assemblymen were ready to vote for the bill, notwithstanding the objections of the Governor. This was more than enough to override the veto, but the serious illness of Judge Low, who has not been able to be in his seat this week, and the defection at the last moment of one Democratic Senator, prevented the success of the movement in the upper house for the lack of one vote. Several Democratic Senators who desired the bill to become a law gave as a reason for not wishing to override the veto, that this is a Presidential year, and they felt that they ought to stand by their Democratic Governor, especially as he was a possible candidate for President.



ARCADE RAILWAY—CROSS SECTION.
BETWEEN STATIONS.

Designed by B. F. Carpenter.

THIS PLAN

PROVIDES AN OPEN AIRY ARCADE, FORTY-FOUR FEET WIDE BETWEEN THE CURB LINES.

This space is sufficient for four lines of tracks and cars of standard width. Inside lines for express trains. Local trains adjoining curb lines conveniently accessible for frequent stops. Car and station platforms on a level, twelve feet below sidewalks.

The side walls are directly under the curb, and of sufficient depth to form the outer walls of a double tier of vaults—thus preparing an available vault space more than double that now in use.

Existing vaults under the sidewalks remain untouched, and the surface of the sidewalks and of the street, remain in the same position as at present.

The floor of the pipe galleries will be of sufficient depth to drain all vaults and sub-vaults, cellars and sub-cellars.

The pipe galleries will be uniform and continuous, and of ample size to accommodate in straight unbroken lines all pipes, wires, etc. The width on ground floors will be sufficient for the conveyance and replacement of sections of the largest pipes.

The pipe galleries will be commodions, easily accessible, and perfectly convenient for the service of water, gas, wires, etc., to adjacent buildings.

THE ARCADE RAILWAY WILL FURNISH:

RAPID TRANSIT FOR LONG DISTANCE TRAVEL.

FREIGHT TRAINS FOR GENERAL MERCHANDISE.

SLOWER TRAINS FOR SHORT DISTANCE TRAVEL.

MAIL AND EXPRESS TRAINS FOR RAPID DELIVERY,

AND AMPLE ACCOMODATIONS FOR THROUGH TRAINS BY EXISTING ROADS, OR TUNNELS TO BE CONSTRUCTED UNDER THE RIVERS.

1885.

NAME CHANGED TO NEW YORK ARCADE RAILWAY COMPANY; LEGISLATIVE
PROCEEDINGS.**New York World, Feb. 2, 1885.**

At a Special Term of the Supreme Court, held at the Court House in the City of New York, on the 5th day of January, 1885—present Hon. George P. Andrews, Justice.—In the matter of the application of The Broadway Underground Railway Company for an order changing its name to the New York Arcade Railway Company.

On reading and filing the petition of the Broadway Underground Railway Company, duly verified by its chief officer and President, Melville C. Smith, Esq., together with satisfactory proof of the due publication of a proper notice of this application for six weeks consecutively, commencing on the 15th day of November, 1884, in "The New York Journal of Commerce," a public daily newspaper published in the city and county of New York, and the "Albany Morning Express," the State paper, from which petition and proofs it appears to the satisfaction of the Court that this application was duly authorized and directed by the Board of Trustees of said Corporation, "The Broadway Underground Railway Company;" that due notice of this application has been published according to law, and that a change of name of said corporation from "The Broadway Underground Railway Company" to "New York Arcade Railway Company" is both desirable and proper; and that doubts exist as to the jurisdiction of the Court to make the order of November 17, 1884; now, on motion of Gilbert C. Walker, attorney for the petitioner, it is

Ordered, that the name of "The Broadway Underground Railway Company" be changed to "New York Arcade Railway Company"; that one copy of this order be forthwith filed in the office of the clerk of the county of New York; that another copy be filed in the office of the Secretary of State, and that a copy of this order be published once a week for four weeks

successively in "The World," a newspaper published in said county of New York, commencing on the 12th day of January, 1885, and from and after the 9th day of February, 1885, said corporation, heretofore known as "The Broadway Underground Railway Company" may assume and shall be thereafter known by the name of "New York Arcade Railway Company."

A copy.

PATRICK KEENAN, Clerk.

New York Evening Post, March 7, 1885.**Railroads in Broadway.**

Schemes for improved transit in Broadway are always coming up because there is a real necessity for it, but it may well be doubted whether a surface railroad in that thoroughfare would be any aid to or improvement upon existing facilities. Indeed, there is much reason to apprehend that it would be a new obstruction and serious impairment of our present means of locomotion along that crowded highway. Street tramways are always a nuisance to every species of wheeled vehicle except their own. Moreover, it is the nature of this sort of travel to aggravate every other difficulty when an obstruction occurs in the street from any cause, since the horse-car has no power to move sideways, or to relieve a jam by escaping into another street, but must stand on its own gridiron until everything is clear in front. In fact, surface railroads in cities are behind the times. Even when moved by steam power, as at Chicago, they are acknowledged to be out of date, and are only tolerated for the want of something better. What is wanted in Broadway is something which shall greatly add to the existing means of transit, and not merely pour another and clumsier class of vehicles into the present road-

which is scarcely sufficient for the traffic now crowding upon it.

Broadway is admirably adapted to underground transit, by reason of the absence of longitudinal sewers. The enormous difficulties which require to be overcome in London, by reason of sewers underneath and heavy buildings overhead, are mainly absent here. The Engineering problem is extremely simple, and its development would furnish means, which are now wanting, for disposing of electric wires, water, gas, and steam pipes, pneumatic tubes, and whatever goes underground, in a perfectly satisfactory way, so that repairs and additions may be made to them without disturbing the surface of the street. The never-ending work of street excavations, required to meet the demands of city life, foots up a formidable bill of expense and provokes endless exasperation. Gas mains leak and fill the earth with mephitic odors, which find their way into stores and houses. Water and drain pipes burst and overflow; steam pipes give way and blow up the pavements; electric light wires need overhauling, and whenever any accident happens the street must be torn up and repaved, to the obstruction of travel and the detriment of property, and at a great expense to the city or to the companies owning the plant. A subway or tunnel which should provide room for these appliances and furnish easy means of access to them, and at the same time give us rapid transit without impairing or lessening the surface way of the street, would be a great public boon.

A method of accomplishing all these ends was sketched in our columns several months ago. The plan described provided for four railway tracks underneath the street, two for express trains and two for way trains, with passage on each side to accommodate every species of existing subterranean pipe and wire, including the arc electric conductor, at sufficient distances from each other to provide easy access and to prevent interference, with eighteen feet of space in the clear on either side from the walls of buildings. The plans are different from those of the Broadway Arcade Railway, in that the surfaces of both street and sidewalk are to remain exactly in the present position, there being no change in the ordinary appearance of the street except at entrances for passengers. *The designs have been made to correspond with the requirements of the charter granted to the Beach Pneumatic company* about the time that the elevated railways were obtained. The charter has been amended by

the Legislature from time to time, and the plans for the proposed underground road have been made to conform to it so that no further legislation is required. If injunctions or legal obstacles are interposed, they must, of course, be settled in the courts, as was done when the elevated structures were first projected, but nothing further needs to be obtained from Albany.

The rapid increase of travel since elevated roads were put in operation is one of the most marvellous indications of city growth that have ever been witnessed in any part of the world. The Third avenue line was barely able to accommodate the traffic the first year of its existence. The travel on the Sixth avenue lines was of slower development, but has now swollen to such proportions that at certain hours of the day the down-town cars are filled before reaching Forty-second street, and the up-town cars before reaching Park Place. The accommodation of straps for passengers for whom "standing room only" could be provided, was the silent testimony furnished by the Manhattan Company to the fact that their carrying capacity at those hours had been overpassed. *The need of additional facilities for rapid transit will soon be as great as it was in 1877. The Broadway underground project seems to meet the requirement with no detriment to private interests, but many advantages not attainable in any other way.*

New York Evening Post, March 9, 1885.

Prospects of the Broadway Underground Railway Company.

The Broadway Underground Railway Company is now occupied with the scheme of tunneling Broadway, and represents the result of much labor by different companies who for nearly twenty years have been endeavoring to begin active work. As to the *charter* under which their company hopes to go to work within a short time, *Mr. Grosvenor P. Lowry*, the lawyer, who is interested in the work and was counsel of the Elevated Railroad Company during its construction, said this morning to a reporter of the *Evening Post*:

"The original act, passed by the Legislature, June 1, 1868, authorized Alfred E. Beach and others to construct one or more tubes beneath the streets of the city for the transmission of merchandise, etc. The act also gave the persons mentioned the power to organize themselves into a corporation under the 'Act

to authorize the formation of corporations for manufacturing, etc. In August, 1868, Alfred E. Beach, Horace T. Caswell, Joseph Dixon, and Moses S. Beach, were made the trustees of a corporation organized under the act as mentioned. On April 9, 1873, the original act was amended so as to allow the Beach Pneumatic Transit Company to construct an underground road for the transportation of passengers and merchandise from Bowling Green along Broadway to Madison Square, thence to Central Park and Eighth Avenue, with a branch from Madison Square to the Harlem River. The tunnel was to follow the centre line of the streets, and to be not more than thirty-one feet wide. Another act, passed June 4, 1881, extends the time during which the road may be built.

"The time has at last come when there is a prospect of the road being built. I have studied the question for years, and in my judgment there is a better chance now of this great work being accomplished than there was of an elevated road being built even after a million dollars had been spent by the Gilbert Company."

Mr. Melville C. Smith, the President of the Broadway Underground Railway Company, said :

* * * * "We have complete reports and plans of every reasonable scheme for doing the work. * * * *"

"The exact plan to be selected will depend upon the decision of our stockholders. No interest will suffer by either of the plans; traffic will not be interrupted, vaults will not be touched, the pipes will be cared for. Within ten days I believe that the plan will be settled upon and that work can begin. All the money can be raised in New York city."

New York Sun, May 10, 1885.

The Broadway Railroad.

The General Term of the Supreme Court has conditionally confirmed the report of Commissioners in favor of the construction of a surface railway in Broadway, from the Battery up.

It is obvious that better facilities for travel through that great central thoroughfare are much needed. Especially between the City Hall Park and Union Square, business and property on Broadway have of late years suffered perceptibly because of the withdrawal of a large part of the stream of passenger travel

which seeks the parallel avenues along which the elevated railroads and the horse cars run.

Experience shows that where the transportation facilities are best, ordinary trade, and more particularly retail trade, prospers most; and it is evident enough why it should be so. Judge Brady remarked in his opinion, there. As are few places to rent in Sixth avenue, but there are many idle in Broadway. In the one are the elevated railroads and horse cars to carry the customers, and in the other omnibuses and cabs furnish the only means of transportation.

Therefore the opposition to a Broadway railroad, which was formerly so strong among the merchants and property owners along the street—the late Mr. A. T. Stewart, for instance—has been changed to eager desire for better facilities for travel. While other avenues have gained, Broadway has fallen back, although as the central thoroughfare of the town it has incomparable advantages as a line of communication between the upper and lower city.

But a street railway, a slow horse railway, will do little good, and would be a great nuisance, especially between the City Hall and the Battery, where the vehicles are already often blocked during the busy hours of the day. Except for cross-town travel, and as feeders for longitudinal lines, we ought to have no more horse railroads. Neither is it likely that the number of elevated railroads will be increased, though the capacity of those we have is altogether insufficient to meet the growing demand for fast and cheap transportation. They are unsightly structures at best, and do not seem to be designed for permanence.

What Broadway needs, and what the city needs, is an underground railroad, or a railroad below the surface of the street.

The best project yet proposed is the Arcade Railway, in which the discomforts and disadvantages of the underground railways of London would be overcome and altogether obviated.

N. Y. Commercial Advertiser, May 13, 1885.

The Arcade Railway bill was advanced in the Legislature yesterday. New York's need of some more adequate means of local travel than now exist is patent. The elevated railways are obviously insufficient to answer present needs, and the need is very rapidly increasing. If a subterranean railway can be made without injury to private property, it should be favored as far as possible, and any well guarded, care

fully drawn bill to authorize the construction of such a railway will deserve and receive popular approval.

New York Times, May 15, 1885.

The Areade Railroad bill was sent whirling on its way in the Assembly. Objection to its immediate consideration sent it to the Railroad Committee, but it speedily came back, and everything was cleared out of the way of its consideration in the Committee of the Whole. This bill had been so delayed that the thorough consideration which it ought to have had was impossible. *There is no question that an underground railroad which shall afford real rapid transit is greatly needed in this city, and the only place for it in the down-town section is under Broadway.* The project in its present shape will not involve excavation under the sidewalks and in proximity to the foundations of buildings, and the fact that it may interfere here and there with private vaults which extend under the roadway ought not to stand in its way if in other respects it is properly guarded.

New York Sun, May 17, 1885.

The Broadway Underground—Contracts Already Signed for the Building of the Railroad.

The bill extending the rights, powers, and duties of the New York Arcade Railway Company was passed by the Assembly on Friday. It had previously passed the Senate, and it now awaits the signature of the Governor. The company, under its present charter, while having the right to build a tunnel under Broadway and other streets from curb to curb, or 44 feet wide, has yet only the right to use 35 feet of this space for railway purposes. The remaining 9 feet were to be used for the placing of the sewer, gas, and steam pipes. The present bill allows the company to use all of the 44 feet for railway purposes, and the company proposes to put the pipes in smaller tunnels under the large tunnel. The additional 9 feet of railroad space will enable it to use the ordinary size of railway cars on the two inner tracks. Four tracks altogether are contemplated—the outer for way traffic and the inner for express traffic. At night it is proposed to run freight cars on the express tracks.

A representative of the company said yesterday that none of the private vaults under the sidewalks on Broadway will be interfered with, except where they run beyond the curb line, as in the case of the *Evening Post* building.

New York Sunday Mercury, May 17, 1885.

Underground Rapid Transit—Contracts Signed for Building the New York Arcade Railway—Pipes and Wires to Go Under the Road Bed.

The bill to extend and supplement the rights, powers and duties of the New York Arcade Railway Company passed both branches of the Legislature and is now in the hands of the Governor. The road is already chartered, the courts have changed the name of the corporation from "Broadway Underground" to "Areade," the three commissioners appointed by the Mayor to supervise the work, General Egbert L. Viele, ex-State Engineer Sylvester H. Sweet, and Naval Engineer Charles H. Haswell, have given their approval to the plans as made, and the bill just passed, as we understand it, simply makes changes which are designed to promote public comfort and convenience and secure rapidity of transit. *The change to compel the placing of sewer, gas, water and other pipes under the road-bed is designed to secure*

UNINTERRUPTED RAPID TRANSIT

from San Francisco to the Battery; whereas, under the existing charter, through passengers desiring to go down town would be compelled to change cars at up-town depots. Without the new bill, nine feet of the forty-four feet between the curbs must be given up to pipes and wires, reducing the room of the company to thirty-five feet for four tracks, and thus compelling the use of small cars, and excluding freight. Under the new bill any and all passenger and freight can be switched on the Areade tracks and whirled to the Battery. This is an important matter of public commerce, and was the main ground of passing the bill. With the Governor's signature, the capacity and usefulness of the road can be largely increased, and this is a fact which will weigh deeply with Governor Hill, who, as a member of the Legislature and president of the Senate, is familiar with the battle of the people in the past at Albany for quick transit on a permanent foundation.

New York Daily Graphic, May 21, 1885.

The Arcade Railway.

The illustration in to-day's *Graphic* gives a correct idea of the Areade Railway as it is proposed to be built under the amended charter now awaiting the signature of the Governor. As will be seen it differs somewhat from the views of the road that have been previously published, although it preserves the general

features of the Arcade plan. The present plan was designed to meet the objections urged by some property owners against last year's bill, and which are supposed to have secured its veto by the Governor. It is now proposed to excavate the street only to the curb line, leaving the vaults under the sidewalks untouched. At the same time room enough is given in the excavation for four tracks of standard gauge and also for the subway, in which are to be enclosed the water, gas, steam and other pipes, where they will be at all times accessible for repairs. This subway is to be built under the outside tracks, as seen in the illustration. The outer tracks are for way travel, stopping once in every four or five blocks. The two inner tracks are for through travel, and will run at a speed of thirty miles an hour, making the distance from the Battery to Harlem River in twenty minutes.

The arrangement of the railways, pipe galleries, sewers, &c., adapting them to the Arcade plan *within the curb line*, was designed by *B. F. Carpenter*.

The *present charter* allows the company *thirty-five feet for its railway*, and requires it to build a *vault at the side* sufficient for the placing of all pipes, wires, &c., which would occupy the entire forty-four feet between curbs, and does not limit the width to the curb line. The present bill does not, as has been erroneously reported, give any *additional width* of excavation, but confines the same to the roadway, simply allowing the engineers and capitalists to place the pipes, wires, &c., underneath as represented, or in such other manner as may be deemed *best*, but *within the limit of the forty-four feet*.

**New York Record and Trade Reporter,
May 21, 1885.**

The Broadway Arcade Railway.

The one act of Governor Cleveland's administration which we greatly deplored was his veto of the bill authorizing the construction of the Arcade Railway under Broadway. The measure had received the approval of the people's direct representatives in the Senate and Assembly, after a full and exhaustive consideration of its merits, and of the plans of construction, and the arguments in favor thereof, the result of sixteen years careful study and most minute investigation.

It is a cause for public congratulation that the projectors of the scheme are not disheartened, nor have they lost confidence in the ulti-

mate success of this great and beneficent enterprise. In behalf of the commerce of the metropolis, the property owners, house tenants, and the tens of thousands of working people in the city, we are glad of the favorable action of our law makers at Albany to this matter. * *

London, the most populous and thrifty city of Europe, owes its superiority and prosperity to its grand system of underground railways, whereby its millions are safely and pleasantly carried to and from their homes, compelling the city from time to time so extend its borders, at the same time adding largely to its material growth. What this means of propulsion has done for London, the Arcade Railway will do for New York, and further delay in this important movement is little less than criminal.

All objections as relating to the practicability of building and operating such a road have been intelligently and dispassionately considered and as candidly answered. It has been demonstrated to a mathematical certainty that the plan is feasible and can be successfully accomplished. Engineering skill and science, architectural talent, and ample capital combined agree that, given the legal authority, this pressing need of New York can be brought to a triumphant issue. * * * *

Statesmanship, commerce and social progress ought to join hands and bid the far seeing and enterprising men organized to build the road all speed in their well matured plans.

The Arcade Railway, when finished and perfected, will, with the New York and Brooklyn Bridge, be the marvel of engineering skill, and popular means of travel of the Western Continent.

New York Record and Guide, May 23, 1885.

The New York Arcade Railway.

Among the measures passed by the late Legislature for the improvement of New York city, was the bill amending the charter of the Arcade Railroad Company. This bill is free from most of the objections which were urged against the act of last year, and which resulted in its rejection by the Governor. It is hoped by many Broadway property holders that the present act will meet with executive approval, and thus permit the much-needed improvement to go forward.

Rapid transit—a thing that the city has never yet had—is the great and pressing need of New York at this moment, and although it may be still longer delayed it is bound to come in the end, notwithstanding

opposition, whether arising from ignorance, prejudice or self-interest. It can never come from elevated or surface railroads. It must be underground transit, and the natural, if not the only feasible route for it, is under Broadway and along the line designated by the charter of the Arcade Railway Company. Why, then, should an improvement that is ultimately inevitable, and a present necessity to the comfort, convenience and health of the great mass of our citizens, be longer delayed? It will be interesting to watch the line of argument that the opponents of the Arcade will resort to this year. The bill which the Governor is now asked to sign provides for the excavation of the street to the curb line, and does not interfere with the vaults, except in a few instances.

But there is another consideration affecting these vaults which the opponents of the measure should bear in mind. The original charter of the Arcade Company, under which the road is to be built in case the amended charter is not signed, requires the company to provide a subway in which to enclose the water pipes of the city as well as gas and other pipes, where they can always be accessible—a work, by the way, that will cost the company several millions of dollars, and which would otherwise have to be done by the city for its own safety ere long. The same charter that requires this limits the depth and width of the excavation, so as to make it impossible to provide this subway except by constructing it under the sidewalks. The principal amendment to the charter now awaiting the Governor's signature, next to providing four tracks of the standard gauge and thus improving the facilities and convenience of transit, is to enable the company to build the subway without encroaching upon the vaults. But if the amendment does not become a law the city will have to revoke all the permits it has granted and leave the property owners without any vaults in order to enable the company to construct the subway. The subway, it should be borne in mind, will soon become indispensable to New York, while the permits for vaults are only granted as special favors and are revokable at the pleasure of the city authorities. The officers and engineers of the company show every disposition to explain all the details of their enterprise, illustrated by full and minute drawings, and have invited the press, Broadway property owners and the public generally to call at the office with that object.

Governor Hill has it in his power to say whether or not the work on a Broadway underground road shall be commenced during the coming year. Some time or other this great public improvement will be undertaken and completed to the manifest advantage of New York city, and more particularly of the Broadway property-holders. But the Governor, by exercising his veto power, can delay for a year the beginning of this enterprise. The amendments to the Arcade charter confines the road bed to the space between the curbs, and hence does not interfere with the vaults under the sidewalks. We have all along believed that an underground steam road on Broadway, with the accommodations for way, through, and freight trains, would be of incalculable value to every material interest of this city, but especially to real estate.

N. Y. Commercial Advertiser, May 26, 1885.

Waiting Only for the Governor's Signature.

With the Governor's approval of the bill which has passed the Legislature incorporating the New York Arcade Railway, the work of excavating a tunnel beneath Broadway will begin at once. The contract for the underground railway has been let, the board of seven directors has been chosen, and the commission to supervise the work has been appointed. It is not believed that Governor Hill will veto the measure, because of the general approval it has met from the Legislature, and because Mr. Hill himself voted for the project some years ago.

N. Y. Record and Guide, May 30, 1885.

The above cut represents a cross section of the Arcade Railway as it will appear when completed according to the amended charter passed by the last Legislature, and which is now awaiting the signature of the Governor. The excavation of Broadway from curb to curb, a distance of forty-four feet, will afford ample room for four tracks, as seen in the illustration, without any encroachment on the vaults under the sidewalks. The two inside tracks will be used for through or express trains, which, with stoppages a mile apart, are intended to make the distance from the Battery to Harlem River in twenty minutes. The accommodation or way trains running on the two outside tracks will stop every three, four or five blocks, according to the necessities of travel, and will run at about the same rate of speed as the elevated

roads. All the trains can have as many cars attached as the accommodation of the public at any hour of the day may require. The motive power will be either electricity, compressed air or cable, thus avoiding all annoyances from steam, smoke or cinders. The pipe galleries underneath the two outside tracks, as seen in the cut, are for the enclosure of water, gas and steam pipes, electric wires of all kinds, and any other subterranean apparatus which the present or future needs of the city may require. Within this enclosure they will always be accessible for repairs or the laying of new pipes or wires, without tearing up or disturbing the surface of Broadway. And here it may be suggested that among the many incidental benefits which will accrue from the construction of the Arcade Railway will be the solution of the serious problem as to what shall eventually be done with these decaying and corroding pipes underneath Broadway, as well as the unsightly telegraph wires overhead. What the Arcade Company proposes to do *at its own expense* will very soon have to be done *at the expense of the city* should the road not be built.

The roof of the Arcade is to rest on iron girders supported by iron columns, and the space between the arched brick ceiling of the Arcade roof and the surface of the street above is to be filled in with asphalt, concrete and sand, thus affording a firm foundation for any kind of pavement that the city may deem best for the uses of Broadway. This pavement, whether it be stone, wood or other material, will never have to be torn up or disturbed till worn out, which will be another inestimable boon to the traveling public as well as a great saving of expense to the city. It will thus be seen that while the primary object of the projectors of the Arcade Railway is to meet the great and imperative necessity of rapid transit, which can be met in no other way, the incidental advantages to the city involved in the enterprise are scarcely less important.

The rapid construction and early completion of this great work is now assured if the bill passed by the Legislature meets the approval of the Governor. Strangely enough, the principal opposition to the improvement comes from a few Broadway property owners, and yet peculiarly they will derive the most benefit. The opponents of the enterprise now number only a small percentage of the owners of property on that thoroughfare. Instead of injuring their property, the construction of the Arcade would restore Broadway to its former importance,

enhance the value of its real estate at least one-third, and render it the finest thoroughfare in the world.

New York Times, June 5, 1885.

The Arcade Railway.

The Governor will hear arguments to-day upon the bill to extend and supplement the rights, powers, and duties of the Arcade Railway Company.

If the Arcade railway project were not one which promises to confer inestimable benefits upon the people of this crowded city, if it were not the most promising and satisfactory plan yet proposed for supplying the means of cheap and speedy travel from the lower end of the city to its northern limits, and if the need of such means of travel in addition to the facilities afforded by the elevated roads which the city has already outgrown, were less imperative, we should be strongly inclined to agree with the Mayor that the defects of the bill now in the Governor's hands are so numerous and grave as to make it his duty to withhold his signature. But the conditions to which we have alluded are present and of undisputed force. Further rapid transit facilities are wanted, and wanted at once, and it is admitted that they will be most conveniently and satisfactorily furnished by a tunnel road under Broadway. The question for the Governor to consider, then, is whether the great and positive benefits the act would confer are outweighed by the risks or injuries to which it would subject the city and its property owners; and, secondly, whether subsequent legislation may not cure the defects now complained of.

It is not possible to give any corporation the power to build a railroad under Broadway without some interference with property rights and some temporary inconvenience to the thousands of people who daily use Broadway. But the resulting advantages would compensate a hundredfold for such injury and inconvenience. We think the Governor should not be influenced by objections of this character unless it appears to him that the bill gives the corporation a liberty of action which would permit and encourage an unnecessarily great disturbance of the travel and traffic in Broadway, and too extensive an encroachment upon private rights. The Governor may dismiss from his mind also the objections that engineering difficulties and the enormous cost make the scheme impracticable. If the road cannot be built no harm can come of the en-

actment of this bill. The Arcade company will not be able to obtain capital enough to begin the work unless it demonstrates that it is a practicable road, and will pay. Nor do we think that it is at all clear that a corporation holding a franchise in the bowels of the earth should be compelled to pay the city for the privilege. A tunnel road would not incumber the city's streets, and it would not use property or occupy space that could be devoted to any other remunerative purpose. On the contrary, the operation of such a road would greatly relieve the surface streets from their excessive burden of traffic, and would add many millions of dollars to the taxable property of the municipality.

Yet, when these minor objections are waived or overcome, there remain two others, more serious, upon which we have before commented. These are that under section 5 of the bill the Arcade corporation, whether intentionally or not, has secured the privilege of carrying on a warehousing business in the lateral tunnels extending 300 feet under the side streets; and that sections 7 and 8, conferring the power to issue capital stock and to borrow money, are drawn with such amazing looseness of language as to leave the company free to conduct its financial operations upon any wild-cat principle it might adopt, and to borrow money to an unlimited extent. These flaws ought to be fatal to the bill unless it shall appear that they can be amended out of it by subsequent legislation.

It being evident that the necessary power exists, it is for the Governor to consider carefully whether the corporation would be able to obstruct its exercise to such a degree as to make it impossible to remedy the defects of the bill as it now reads. It is our opinion that if, after a most conscientious weighing of the arguments for and against the bill, the Governor should affix his signature to it he would confer upon the city most substantial benefits, whose enjoyment it cannot afford to postpone even for a single year, save for the gravest reasons.

N. Y. Commercial Advertiser, June 5, 1885.

The Arcade Railway.

One by one our contemporaries are coming to the view held by the Commercial Advertiser from the first with respect to the Arcade Railway scheme, namely, *that the city's need of such a road is imperative; that only a Broadway Arcade road can meet the requirements*

of our situation; and that the bill now in the Governor's hands, which promises to secure this great and lasting benefit to the city, ought not to be vetoed unless it can be conclusively shown that there are radical defects in it.

New York Times, June 6th, 1885.

Hearing Before Governor Hill--Engineering Features.

Wm. J. McAlpine, engineer of the company, explained that no hazard, injury, or inconvenience shall be done adjacent buildings or premises; that travel by vehicles and pedestrians on the main and crossing streets shall not be interrupted during the construction of the works; that the constant and accustomed use of adjacent buildings shall not be interrupted or inconvenienced; that the constant supply of water, gas, drainage, &c., to such buildings shall be continued without interruption, and that such motive power shall be used as will not vitiate the atmosphere of the Arcade or of adjacent premises. The completed structure will present a strong and durable roadway for public travel, far superior to the existing one, resting upon a solid foundation of concrete, supported from below by walls of masonry, iron columns and strong iron girders, all of which will endure for a century or more, and each part so arranged as to be replaced without interruption to street or railroad travel. The surface pavement will never be required to be disturbed for any purpose whatever until it is entirely worn out. The water, gas, steam heating, and drainage pipes, as well as the electric wires, which are to occupy the ground at various depths below the pavement, require to be taken up frequently for repairs and replacement. In the plans for the Arcade all these pipes will be placed in open vaults, through which the inspectors can walk and hourly examine every pipe and promptly repair or replace defective ones or put in new ones. These examinations, repairs, and replacements will be made without disturbing the street or railway works, and at less than half the cost of doing so now. I have from time to time submitted these plans to almost all the leading engineers of the United States, and to many of those of Europe, and have not found one who has not expressed the opinion that these objects can be accomplished by suitable engineering plans at a reasonable expense. In regard to the bill under consideration its main engineering features are, first to authorize the use of an increased width of 12 feet, so as to

allow the use of wider cars from outside railroads. The sewer pipes will be carried through open work iron columns, and will not interfere with any vaults. The whole number of houses below Fourteenth street is 860, of which 625 have vaults, and of these 506 do not extend beyond the curbstone. The proposed iron columns and connecting brick walls will simply replace the existing outside walls of the present vaults, and sub-vaults will be made by the company which will have more than twice the capacity of the present ones. The movable bridge which will be used will be laid down in one night and will permit all work connected with the Arcade to be done without using the main or cross streets, and hence will cause no obstruction thereon. The work will be progressed from six different places in the first four miles, and the forward progress from each will be from 5 to 10 feet each day, and the whole time occupied in front of any building less than 100 feet front will not exceed more than 30 days. The largest water-pipe on Broadway is 3 feet in diameter, and they are generally from 12 to 24 inches in diameter. The sewers in Broadway are generally from 12 to 18 inches in diameter, while the largest one, extending for five blocks above Canal street, is 4 feet by 2 feet 8 inches, and the cross sewer in Canal street to the North River is the same size.

Law Points.

Mr. Robert Sewell argued as to the constitutionality of the bill. He said the bill does not violate any amendment to the Constitution. There are only two amendments that are at all applicable. First, there is one prohibiting granting to a corporation any exclusive franchise. This bill does not grant an exclusive franchise, because *the company has an exclusive franchise already for building a four-track railroad under Broadway*. This it had when the constitutional amendment was passed. This bill gives the company the right to spread its tracks so as to take in wider cars than it now has the right to use, which would enable it to run cars of the standard gauge. The bill allows the company to excavate no wider space than it already has the right to excavate—to wit, from curb to curb, or nearly so—but it is now obliged to put water pipes, gas pipes, and sewers at the side, between its tracks and the curbstone. This bill gives them the right to put those pipes under the tracks, and to use the space thus saved to widen their tracks. The courts have held that where a corporation is in existence and has forfeited its franchise for any

reason, the Legislature may restore the forfeited franchise without violating the Constitution, and the whole subject is fully treated by the Court of Appeals in the elevated railroad cases. Neither does this bill violate the second provision of the constitutional amendment, which prohibits the Legislature from authorizing the construction of a street railroad without the consent of property owners along the proposed route of such railroad, or by order of the Supreme Court: first, because this bill does not authorize the building of a railroad at all. The company now has the power which it never forfeited, to build a four-track railroad under Broadway. There is no need of granting to it that which it already possesses. The most that can be said to be granted by this bill is a provision to lay wider tracks and run standard cars thereon, which is a very different thing from granting original authority to build a railroad, which is what the constitution prohibited, unless the property owners consented or the courts so ordered. Secondly, it does not violate this prohibition, because the railroad which is to be built under Broadway is not a street railroad at all. A street railroad is a road laid on the surface of a street, which interferes with traffic on the surface, or one in the air, resting on the surface, which would interfere with the enjoyment of light and air by property owners. It is very proper in such cases that property owners should consent, but even here their non-consent is provided for by giving jurisdiction to the court. A railroad under the street interferes neither with traffic on the surface, nor light and air, and property owners have all enjoyment of the street which they would have if the railroad was not there.

The State owns the fee of the street, subject to the right of the public generally, to use it as a highway on the surface and subject to the rights of property owners along the street to use it for access to their property and for light or air. Neither the general public nor the abutting property owners have any estate in the earth under the surface, either by way of a vested right or an easement. Hitherto the street under the surface has been useless, except to put pipes in and hold sewers. The Legislature has a perfect right, untrammelled by any constitutional provision, to make use of land under the surface for the public good, and in any way that seems best to do it. The vault owners, so called, have no ownership at all. They have a simple right from the city authorities to use the space under the sidewalks at sufferance. This right may be recalled at any

moment and the vault owners cannot complain, because they knew that when they built their vaults.

Charles Kensell, representing various labor associations, presented various resolutions from labor societies in New York City comprising over 60,000 members, recommending the Governor to approve the bill as a great boon to the poor working people.

The Governor inquired what was the occasion of the bill being delayed to the last day's session, and asked the date of its introduction.

President Smith answered that the bill was introduced in the Senate March 11th, with the view of holding its place on the calendar. Owing to the fact that last winter the principal objection urged was that provision had not been made for the building of the road, the company decided not to ask further legislation unless a contract with responsible parties should first be made. As this required the securing of several millions of dollars, and the pledge and ability to raise millions more when required, the negotiations were not closed until May 7. "On the morning of May 8, the Railroad Committee of the Senate were informed of our desire to secure an amendment that would allow the putting of the pipes underneath the road-bed, and thus enable us to have sufficient room for our cars, so that passengers could be carried through to the Battery or anywhere on the line without change. Senator Thomas asked to have the bill printed immediately, so as to give the fullest possible information. The company had a man remain in Albany to carry the bills immediately when printed to our opponents in New York, and the bills were thus delivered to Mr. Man, Colonel Cruger, and others of the opposition at the earliest moment possible, and as soon as received by us.

There was no desire to mislead, and every possible opportunity that the circumstances admitted of was given to the opposition. The motion in the Assembly to discharge the Committee of the Whole, and thus cut off amendments and debate, was made by a member opposed to the bill and who voted against it.

New York Times, June 6, 1885.

At the hearing before the Governor yesterday on the Arcade Railroad bill the real defects of that measure were hardly touched upon. When it comes to the merits of the project it-

self, the need of something of the kind, its engineering features, and the question of interference with private property, the advocates of the bill have by far the best of the argument. As a plan of rapid transit the underground railroad is very promising, and it would meet a positive need. Its engineering features and the plans for carrying on the work seem to be admirable. *There is not the slightest ground for believing that the foundations of buildings would be endangered, and the interference with private rights is brought to a minimum and almost to nothing by the very character and position of the road.* The constitutional argument against it was pretty thoroughly dissipated by Mr. Sewell. The real objection that has force is the lack of proper restriction upon the financial arrangements of the company, and it is a question whether so important an enterprise should be deferred until that defect can be remedied. Defeated we are convinced it ought not to be, and that seems to have been the object of the opponents of the bill.

We reproduce here Governor Hill's veto, in full, from the fact that one of the articles quoted herein criticises the Governor's action, on the assumption that it is inconsistent with his vote on substantially the same measure while a member of the Legislature.

It will be seen by his message, that he indicates no change whatever in his views in favor of an Underground Railway, nor does he raise special objections to the bill itself, but bases his action upon the circumstances connected with its passage by the Legislature.

New York Herald, June 12, 1885.

Veto of the Broadway Arcade Bill.

The Governor refuses his assent to the Broadway Arcade Railroad bill, and to-day filed with the Secretary of State the following statement of his reasons therefor:

State of New York, Executive Chamber, {
Albany, June 11, 1885. }

Memorandum filed with Senate bill No. 444, entitled "An act to extend and supplement the rights, powers and duties of the New York Arcade Railway Company." Not approved.

It is urged by the opponents of this bill, among other things, that it was rushed through the Legislature during the closing hours of the session in

indecent haste and in violation of every legislative right and privilege to which those who sought to oppose it were honestly entitled. An objection of this nature, although not frequently urged before the Executive, is nevertheless of great weight. Objections based upon the manner and methods by which an act is passed, while they do not affect its legality, may properly be entertained in considering its fairness and avowed purposes, and sometimes may well be deemed to characterize the whole scheme contemplated by the bill.

It is conceded that the bill before me was not even introduced in the Senate, where it originated, until the latter half of the session, and thereupon, when its opponents applied for a hearing, they were informed that it was not then expected to press the bill, but that if it should afterward be urged they would be duly notified and afforded ample opportunity to be heard. The bill was thus allowed to quietly slumber in the Senate Committee on Railroads until after the date for the final adjournment had been agreed upon, and then was suddenly brought forward, and only a portion of its opponents being given a few hours' notice of a hearing—a notice wholly inadequate for the proper preparation—and it was then speedily rushed through the Senate on Wednesday of the last week of the session, and reached the Assembly on Thursday of that week, where a request for a hearing was denied, and without amendment, debate, or opportunity for discussion, and under the operation of the parliamentary device known as "the previous question" it was put through that body the next forenoon, about an hour before its adjournment.

Such proceedings, while they do not invalidate the passage of a bill, nevertheless violate all sense of legislative propriety, and bring scandal and disgrace upon the law-making power. The withholding of important measures in the interests of private corporations until the last days of the session, and then rushing them through without consideration, debate, amendment or opportunity for scrutiny, but amid confusion and disorder, is a growing evil which must be checked. It affords facilities for corrupt and dishonest legislation; it prevents a candid consideration of measures upon their merits; it opens the door for charges of unfairness, and casts suspicion upon the integrity of legislators.

Citizens whose interests are affected, or are believed to be affected, by legislation proposed in behalf of private corporations, have a just and equitable right to be heard in opposition to such legislation before the proper committees of the two houses. In no other way can such citizens be permitted to urge their grievances and present their arguments before the Legislature. Such right should be jealously guarded and stoutly main-

tained. An intentional infringement or deprivation of it should naturally cast suspicion upon the integrity of the legislation enacted in disregard of so essential a prerogative.

This bill concerns the greatest thoroughfare in this country, and involving franchises and privileges of immense worth, affects not only the interests of New York itself, but the interests of thousands of its citizens who are the owners of property of many millions of dollars in value. Such citizens are entitled to a reasonable opportunity to be heard in opposition to the bill. There should have been no undue or improper haste. Full and ample hearing should have been afforded to all sides, and especially to the local authorities and the owners of property affected by the proposed legislation. Opportunity for debate and amendment should have been extended.

The Legislature itself, as well as private corporations, should understand that the citizens of New York city have interests and rights which must be respected.

A bill upon a subject so important as this should be carefully considered, thoroughly discussed, deliberately and honestly acted upon, with full opportunity for modification and amendment. Its passage, under such circumstances, would carry with it a strong probability of merit. It is evident, not only from the concealed facts pertaining to the introduction, progress and final passage, that this bill carries with it no such presumption of merit, but also a bare glance at its provisions shows conclusively that it has not received due and proper consideration at the hands of the Legislature. It fails in several essential particulars to adequately protect the interests of the city, or the property of the citizens, or the rights of the public. It perpetuates many of the defects which were urged as objections to the same measure one year ago by Governor Cleveland. These it is unnecessary to reiterate here. The bill cannot now be amended, but must stand or fall as a whole. The objections might have been obviated had either such fair consideration been given to the bill as has been indicated it was entitled to receive, or had the measure been submitted to the Board of Railroad Commissioners for its investigation and opinion. That Board was created by the State for the very purpose of aiding the Legislature in determining the propriety of railroad legislation, and its services might, with great propriety, be oftener sought, and would, unquestionably, have been particularly valuable in perfecting this measure, involving interests of such great magnitude. Such a course was not pursued, but, on the contrary, the bill seems to have been hastily prepared, was speedily progressed and pressed through the Legislature under the circumstances stated, without consultation with the city authorities or the indorsement of

the Railroad Commissioners, or the approval of any public official or body whatever, aside from the hasty action of the Legislature itself.

Under the circumstances stated I cannot approve of this measure.

It is desired also by this action to emphasize my condemnation of the offensive and ill-advised methods invoked in its passage, in the belief that such a course will prove beneficial to future Legislatures in compelling the introduction of bills in the earlier days of the session, and in securing greater deliberation and enforcing better consideration and respect for public interests and the rights of property owners while enacting important laws at the instance and for the benefit of private corporations.

Legislation, instead of being the fair and deliberate expression of the honest convictions of the people's representatives, is fast becoming, under existing practices, a scandalous mockery, and it is a fit time to insist that there should be a return to the legislative methods of earlier and purer days, if bills are expected to receive Executive approval.

DAVID B. HILL.

N. Y. Commercial Advertiser, June 12, 1885.

The Arcade Veto.

Governor Hill has vetoed the Arcade Railway bill. So far as it is possible to determine from his own statement of the reasons that have moved him to that course, he has vetoed it not so much because he regards it as a bill that ought not to become a law, as because he wishes to rebuke the Legislature for its manner of passing the act.

The Legislature of 1885 merited rebuke for many of its deeds and most of its methods, but the rebuke certainly should not have taken the form of a veto for a bill of great public moment. As we have before pointed out, there were objections to the Arcade Railway bill, though in our judgment they were outweighed by the great public benefits its approval would have secured. If Governor Hill had held a different opinion, if upon examination he had reached the conclusion that the bill was one which he ought to disapprove in the public interest, we should have applauded his course as statesmanlike and upright, though in our judgment mistaken.

Except among a few interested persons who are disposed to stand obstinately in the way of any scheme for the improvement of Broadway traffic, there is but one opinion as to the peremptory need of a subterranean Broadway railroad. Even those who have most earnestly opposed the Arcade bill give

willing assent to that. But in order to induce capitalists to build such a road it is necessary to grant to them such franchises as are necessary to insure the financial success of the enterprise. Without such grants we shall never get the road upon which the future prosperity of this city largely depends, and every postponement of the grant puts off the time when the road will be in operation, and to that extent hurts the prospects of the city.

A recent writer in opposition to the Arcade bill, in the columns of a contemporary, has admitted the necessity of building a great passenger rapid transit railway under Broadway, and has pointed out the fact that under existing laws it is possible for any company of capitalists to organize and build such a railroad without the aid of a charter. But, if the prospect for profit is so glittering as he represents it to be, how is it that Broadway property owners or other capitalists have not made haste to act upon his suggestion? And why have they not embraced the scheme before he suggested it? There is plenty of unemployed capital, and in these days 10 per cent. dividends are very greedily sought after. The Arcade Railway people insist that *no Broadway underground railway can be profitably built and operated under existing laws*, and that the special concessions for which they have asked are necessary to enable any company to undertake the work. The neglect of Broadway property owners and other capitalists to avail themselves of the opportunity seems to indicate that in their judgment the opinion of the Arcade Railway people is sound.

For ourselves, we desire only the public good in this matter. We do not care the value of a penny for the Arcade Railway people or their interests—wherefore the critic to whom we have referred regards such support as we have given to this measure as “irrelevant”—we do not care under whose auspices the railway shall be built, provided it is built well and speedily. But we are convinced that such a road is a great and pressing necessity, and we deeply regret the veto of this bill, because we believe that it will postpone a sorely-needed improvement to the hurt of the city and people of New York.

New York Times, June 12, 1885.

The Governor has concluded to withhold his approval from the bill to extend and supple-

ment the rights, powers and duties of the Arcade Railway Company. We have heretofore set forth the objections to the bill in the shape in which it was passed by the Legislature, and have said that the Governor would be justified in withholding his signature. At the same time we have deemed the construction of an underground railroad a matter of such pressing importance to the city, and the extension of the rights of the company so essential to its successful operation, that we had hoped that these objections might be obviated on some reasonable assurance that the defects of the law would be remedied hereafter. We are still of the opinion, that if the Governor had been fully impressed with the value to the city of the proposed scheme of rapid transit, he might have secured from the officers of the company, as a condition to his approval of the bill, some binding assurance that they would consent to amendments which would remedy its defects. He might have gone so far as to sign it and put on record his suggestions of amendments to be made hereafter, trusting to the next Legislature to adopt them, as he did in the case of the Collateral Inheritance Tax bill. Of course, he was not bound to take either course, and the Arcade Railroad Company will have to *wait yet another year* for the proper legal basis for its project.

The company *has already the right* to construct a *tunnel road* under Broadway, but it is restricted to a space 35 feet in width through the middle of the street. This is not sufficient for its purpose. *If the underground road is to be constructed it is even more important to the public than to the company that it should fully serve the purposes of local transportation. It should be so constructed and equipped that it could run cars of full size for passengers and serve the exceedingly important purpose of furnishing a down-town freight connection to and from the railroads entering the city.* For this it would need a wider space than is now allowed, and facilities at intervals for transfers and temporary storage, for which the lateral excavations were intended. This privilege of lateral excavation at cross streets should be carefully guarded, but it seems to be essential to the complete usefulness of the road. *A work of this kind ought to serve as a means for rapid transit and of quick local travel, and at the same time supplement to the fullest extent practicable the existing facilities for transferring merchandise through the length of the city. It would need to have this scope in order to meet the*

full requirements of the public, and it would also be necessary to insure the financial success of so costly a scheme. All this ought of course to be accomplished without violation of public or private rights, but the private injuries would be small and easily compensated, while the public benefits would be great, and public rights could be fully secured by proper legislation.

It is unfortunate that the bill was not brought up earlier in the Legislature and subjected to careful scrutiny and full discussion. This would have revealed its defects and given an opportunity for remedying them.

* * * The Governor does not show that the haste with which it was put through, which was in reality due to the delay of the company in making sure of its financial guarantees, did not in fact result in a perfect measure, but he condemns such haste, and so far as appears in his statements vetoes the bill for the sole purpose of administering a rebuke to the Legislature. * * *

New York Sun, June 25, 1885.

Of Course They Are Full.

Of course the Broadway horse ears are crowded, and the railroad is proving of advantage to business on the street. It has been obvious for many years that trade along that central thoroughfare was suffering because the lack of means of transit which were provided in other streets, but which were kept from lower Broadway, as if it were a sacred avenue.

This railway, too, is pretty sure to be one of the most profitable in the city, even if it does not pay better than any other, for more than any other it will get the most desirable business of a horse railroad—the short trip fares. People ride a few blocks and then get out and make way for other passengers, so that the number of fares taken in on a trip is extraordinarily large.

Jacob Sharp and his friends and associates have therefore got a pretty investment in their Broadway railroad.

But the eagerness with which the public rush to use these slow ears, with all their inconveniences of crowding, blockading and delay, shows how greatly we need rapid transit along the Broadway line, and how much it will benefit business on the street.

We are inclined to think that it will be far more difficult next year than it has been in the past to stir up opposition to such an underground railway as the Arcade project.

SUBWAYS.

NECESSITY FOR UNDERGROUND GALLERIES FOR PIPES, WIRES, &c.

New York Tribune, Jan. 2, 1883.

Mayor Edson—Extracts from his Message.

"An important question arises here, namely, whether some system of general city improvement cannot be adopted whereby this frequent upturning of our thoroughfares, with its consequent disturbance of travel and of business, may not be wholly prevented. Here would seem to be an opportunity for some person of enterprise, or for some private corporation, to mature a plan for underlaying the streets with a single excavation which shall provide not only for the water, gas and steam-pipes, but also for telegraph and telephone wires, and other appliances which the public convenience may hereafter require."

New York Herald, October 22, 1882.

Underground in New York.

New York can no longer afford to delay measures to secure unobstructed streets. In many years past there has seldom been a week in which some street was not torn up and more or less obstructed because of necessary work on sewerage, gas or water pipes, and on many occasions the obstructions have caused great delay and loss to business men and pedestrians. The annoyances of the past, however, have been slight to those now in prospect. It would be hard to exaggerate the delays, losses and provocations already inflicted on business and travel in Broadway, Fulton street and the several other streets in which two steam-heating companies have recently been laying their mains, yet we believe the torment is to be repeated by still another steam heating company, and many other streets are yet to be torn by all three companies working separately and at different times. Pneumatic tubes, for the delivery of letters and small packages, having proved successful, they may be expected to come into general use and be the

cause of another general upturning of the streets. The public will not much longer endure the forests of poles and webs of wire that the telegraph and electric lighting companies have erected; all of them are unsightly, some of them are dangerous, and sooner or later all the wires must be carried under ground, compelling still another breaking up of pavements and earth.

When all this is done the obstruction of the streets and the sufferings of the public will have barely begun. Every time steam, pneumatic or electric connection is to be made between a house and a main, there must be an excavation and a partial blockade of the street. Whenever a break or leak or other accident befalls a main or connection the street must be torn up. The faculty which steam possesses for leaking at unexpected times and places is notorious; there is scarcely a building heated by steam in which leaks do not occur almost daily, so it is reasonable to expect much trouble under ground if the use of steam becomes general. In the general increase of service through underground channels and the modifications that will continually be required by the erection of new buildings, there is a definite promise that every important street will be more or less obstructed for years to come.

The prospect is simply unendurable; the public will be deprived of millions upon millions of dollars' worth of time by the unending succession of obstructions, aside from the sickness that is always caused by exposure of street earth to the air and sun. Relief must be found in some way, and the only hope of it lies in a system of tunnels such as exist beneath the pavements of many streets in Paris. Through these, which were excavated primarily for sewerage purposes, pass the water and gas mains, so both are accessible at any time for repairs or connections. A similar underground system would be practicable in New York, and the entire cost might be defrayed by rentals or other payments, for if proper excavations already

existed the corporations that must lay mains and wires under ground would gladly pay for the privilege of passing them through an accessible tunnel instead of burying them as now they do. For right of way through such tunnels underground railway companies could afford to pay handsomely, so the proposed improvement, instead of adding to the financial burden of the city, could be made the source of a handsome revenue.

It would put a permanent end to the nuisance of upturned streets, for connection with any house along the line could be made by boring from the tunnel.

It has been suggested from time to time, when underground railroads have been talked of, that, owing to rock and large boulders, tunneling is impracticable in some parts of the city. *No such objection exists in the minds of practical engineers*, and there would be no lack of competent contractors were the city to ask for bids on such work. That at least the principal streets should be tunneled cannot be doubted by any one who has seen in Broadway and Fulton street the beginnings of underground work that must continue for a long time. Broadway is the principal business avenue on the continent: Fulton street is the principal line of communication between the metropolis and the third city of the Union; neither street is always equal to the travel upon it, even when entirely clear of obstructions. Most of the avenues and many of the cross streets are thronged from daylight to dark, and to expect those who use them, or have stores or houses upon them, to endure continual breaking up of pavements and soil is too much. *A general underground system of mains, tubes and wires is inevitable, and to make it as profitable and useful as it may be it should be inaugurated at once, beginning with the streets that are most frequented.*

New York Evening Post, April 11, 1883.

Underground Telegraphs.

The overloaded poles and the network of wires with which the city is encompassed are an eyesore to the beholder, and a standing menace to life and property. In cases of fire it is difficult to manage ladders in front of burning buildings which are fringed with a cordon of telegraph and electric light wires, and thus lives are lost which might otherwise be saved. When sleet-storms come and a heavy coating of ice forms on the wires the poles are thrown

to the ground with violence upon the heads of men and animals passing along the streets. The network of wires upon the roofs of buildings impede the labors of firemen in cases of conflagrations, besides being an intolerable pest to owners, whose rights are made no more account of by the electric companies than by so many colonies of spiders. Now and then some exasperated householder goes to his roof with a hatchet, cuts all the wires on his premises and demolishes the fastenings. In so doing he may or may not cut the fire-alarm telegraph of a neighboring district, and expose it to the gravest peril. All these evils and difficulties are multiplying from year to year, as the demand for increased telegraph and other electric service grows.

It is in view of this state of wretchedness that the public are likely to look with some toleration upon measures like that which the Board of Aldermen passed on Tuesday, but which, in order to be made effective, ought to be supplemented by a municipal or legislative requirement that all wires be put underground, by some process, within a certain time. Such a requirement was voted by the Common Council of Chicago some months ago, and is now in process of enforcement. The time is not far distant, we think, when even more comprehensive measures will be needful to relieve the surface of the city streets of a part of its encumbrances. Tunnels will be brought in requisition sooner or later, not only for the reception of telegraph wires, pneumatic tubes, water, gas and steam pipes, *but for the transportation of heavy goods between fixed points.*

New York World, Sept. 23, 1883.

Impassable Broadway.

New York has practically but one thoroughfare through its business section. Broadway furnishes the only means of getting direct from the Battery to Union Square, or to any of the cross streets wherein merchants most do congregate. Despite its name, it is all too narrow for the traffic passing over it on any week day. Yet there is hardly ever a time when a good part of its surface is not rendered useless by some corporation or other that has the right to tear up the pavement.

Will there ever be an end to this chaos? There appears to be no end to the list of those who must put something under Broadway. To-day it is a steam-heating company; to-morrow it is a gas company; the next day it is

some other company. The nuisance is a first class one. It not only interrupts business, it also breeds disease and leads to vexation of spirit and that irritability of temper which not unfrequently is at the root of crime.

Is it not about time to put a stop to this constant annoyance? Why not build a tunnel wherein to place all these wires and pipes which have become a necessity to comfortable existence in large cities? The cost of such a tunnel would be saved in ten years in repairs to the street alone, not to mention the saving in horse-flesh, time, health and cheerfulness.

Paris has utilized her great sewers for this purpose. Water pipes, gas pipes, telegraph wires and all have been placed within them. *One such tunnel running from the Battery to Central Park would answer New York's needs for some time to come, and it should be begun at once.*

New York Times, Nov. 15, 1883.

Wires and Subways.

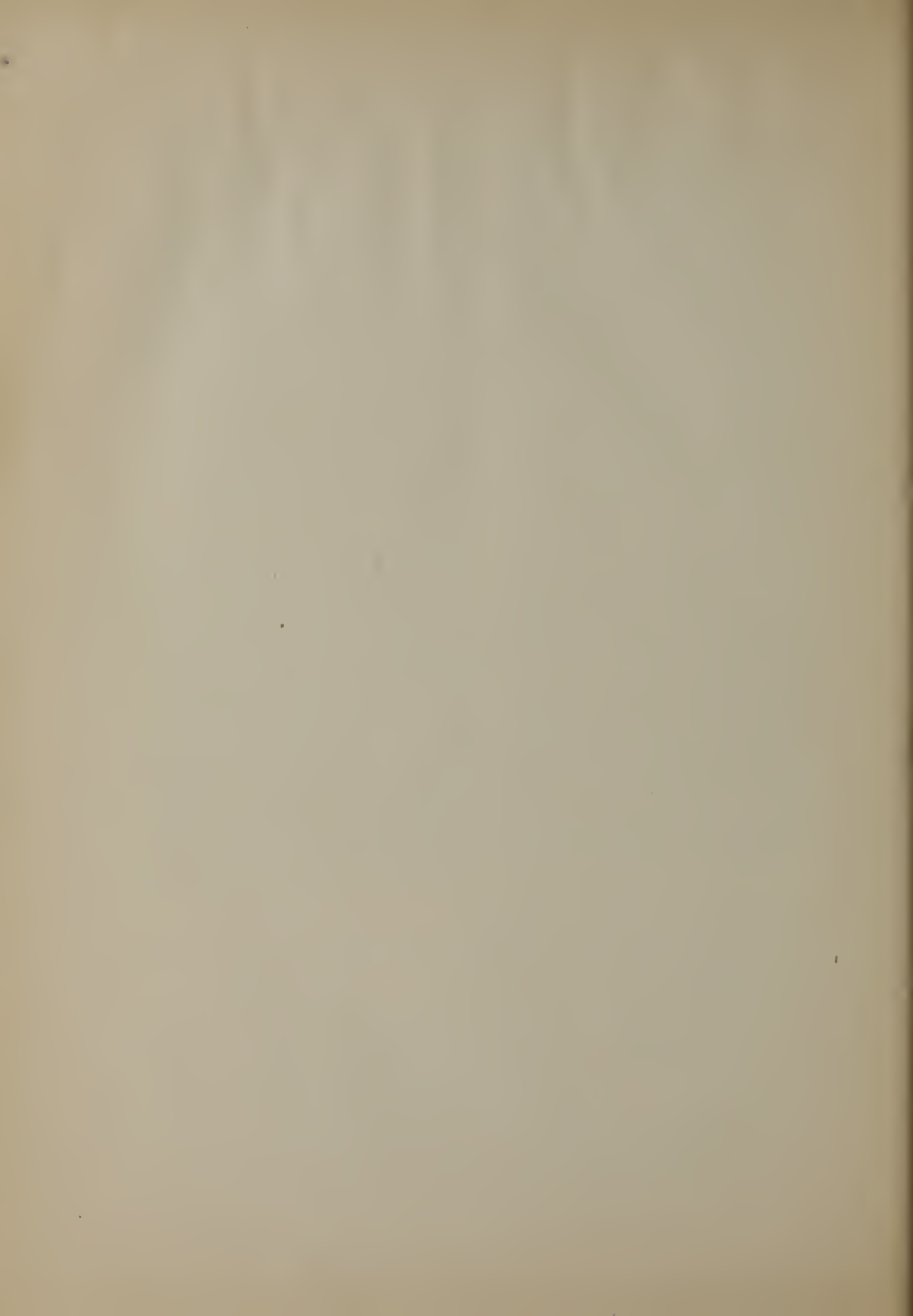
The multiplication of electric wires in the streets has long been a nuisance. It has now been shown anew to be a danger. The Edison Company have wisely chosen to lay their wires underground without waiting for any legal compulsion. But there should be a comprehensive and radical attempt to dispose of the question, which is far wider than any possible extension of the system of electric wires.

Subways should be built first along the most important arteries of traffic and communications, and other subways tributary to these could gradually be constructed. Every subway, of course, should be of a capacity to

contain all the appliances for distributing water, gas, heat, and electricity, and should be so constructed that any one of these may readily be got at for purposes of repair. At present the sewers are laid with no reference to the water mains, the gas mains and the steam-heating pipes with no reference to either, and the electric wires of most of the companies are not laid underground at all. Add together the cost to the city of laying sewers and water mains, and getting at them for alterations and repairs, and to the several corporations interested the cost of laying and getting at gas mains and steam pipes, and of setting poles and stringing wires in the air, and the aggregate would go far toward meeting the interest upon the capital required to construct a system of subways. And such a system would meet all the various requirements which no attempt has thus far been made to meet by means of one general plan.

New York Record and Guide, May 24, 1884.

It is very evident that some time or other the city must be honeycombed with subways. Underground New York has developed marvellously within the last quarter of a century, and the time has come when to avoid the incessant tearing up of our pavements that permanent subways should be constructed, so that sewers, gas mains, steam heating pipes, water mains, as well as telegraph, telephone and electric wires and pneumatic tubes, can be constructed or repaired without touching the pavements. But, as we have said, *the construction of the Arcade road would greatly simplify the problem of making use of subterranean New York.*



MISCELLANEOUS EXTRACTS.

PASSENGER TRAFFIC; TRANSIT FACILITIES; GROWTH OF POPULATION, &c.; ALSO
BRIEF REFERENCE TO EARLY LEGISLATION, GOV. HOFFMAN'S
VETO AND THE COMMENTS OF THE PRESS.

N. Y. Commercial Advertiser, Jan. 6, 1886.

The pressure on the means of transit up and down Manhattan Island is becoming exceedingly serious. I find that it is talked of on every side as one of the most urgent questions of the time. People see and feel this inconvenience in their own persons from day to day, but it can only be fully realized by a consideration of the figures. New York's population doubles in a little over twenty years. It is estimated that while numbers increase at—say 47 per cent. per decade—passenger traffic has increased during twenty years past at nearly 142 per cent. per decade. But the passenger traffic in 1850 was less than 7,000,000 of persons transported, against 515,547 of total population, while in 1885, the passenger traffic was full 300,000,000 against (1880) 1,205,299 of population.

One need go no further than this to perceive what a tremendous demand is impending for transportation up and down the city of New York, and how indispensable it is that suitable provision should be made to meet it. The great mass of people do not care two straws as to the means which may be employed, or the men who may be benefited by this or that projected line of rapid transit. What they do care for is that the rapid transit should be had, and soon had, and that existing lines should not be allowed to thwart, by trickery, either at Albany or elsewhere, the public needs and will. It will not answer to put off the solution of this problem much longer, since already the inconvenience of this season promises to swell into an unendurable evil in the next.

New York Sun, March 15, 1885.

The Arcade railway under Broadway would form a most desirable addition to our present means of rapid transit.

American Progress, Jan., 1886.

The Arcade Railway.

We believe we are safe in saying that the three most important problems that confront New York City to-day are: The introduction of *genuine rapid transit for both passengers and freight*, a satisfactory disposal of the different classes of electric wires underground, and the relief of Broadway from overcrowding, and from the constantly recurring upheavals which seem to be a necessary part of the present system.

The elevated roads are incapable of any but the slow accommodation trains, which waste a large part of the running time in the frequent stops, and which are utterly useless in the transportation of freight. The freightage of this great city is increasing enormously year by year, and the difficulties in handling this freight multiply daily, involving an immense waste of time and money.

In a single year 15,631,609 tons of freight were carted through New York, at an average cost of \$3.07 per ton per mile. At the same time the N. Y. Central carried freight for 7½ mills per ton per mile, making the cost of freighting from Buffalo to New York City *less* than the cartage after arrival. Besides this, the slow and tedious hauling of goods over city streets results in much damage to merchandise. * * * * *

Either of the evils we have mentioned is sufficiently formidable to-day, and they are growing at such a pace that no time should be lost in providing some effective remedy.

Of all the remedies proposed there is only one which meets every phase of the problem fully and perfectly, and that is this Arcade Railway system. * * * * *

As the track will be of the standard gauge, freight trains from any of the lines reaching New York can be run over this trunk line di-

rectly to warehouses—saving all cartage. When the North River tunnel is completed, through trains from the West can distribute goods in the city by that route—saving all expense and delay of cartage, including on an average six separate handlings.

The plans of the company are adapted to *any form of modern motive power* which will not vitiate the atmosphere. * * *

The main question is the public good. By far the larger portion of its patrons would be the wage-earners, both male and female. Already rents are too high down-town to permit working-men to live there, and yet they must be within easy distance of their work. If a workman can come from Harlem in twenty minutes he will prefer to reside there, both for health and economy.

From a sanitary and humanitarian standpoint the question is of vast importance. In a portion of the tenement district of New York there are packed 400,000 human beings in a square mile of area. God's free air and sunlight are luxuries which they cannot command, as they must live within a certain number of minutes from their work—tardiness being punished by heavy fines. They must live in the locality of high rents, and as they cannot pay for the necessary room, they are crowded into small space, amid dirt and vermin. The observance of sanitary rules is out of the question, and the death rate is as high as 1 in 19, while that of the better wards is 1 in 60. Communities subjected to such conditions must necessarily become nests of vice and crime, and the public are taxed not only for hospitals in which typhoid and other patients are treated, but for jails, courts, penitentiaries and police.

The rapid trains and 5-cent commutation fare of the Arcade would place these unfortunates in country homes, with plenty of breathing space, healthful physical and moral surroundings and cheap rents, and would transform these hopeless toilers into prosperous working people who would, after a while, own their own homes and bear their share of the public burdens.

As a question of municipal economy the Arcade will open up and populate a large district which, in a few years, will equalize the burden of taxation which now bears so heavily upon property owners in the lower wards. The road, when built, will add \$10,000,000 of taxable property to the city, the transit facilities will lead to the building up of at least an equal value of dwellings in the upper wards, and the \$80,000,000, at three per cent. of a fifty-per-cent.

valuation, will pay into the treasury \$1,200,000 a year in taxes, besides creating an increase in taxable values all along the line. Unlike most great improvements, it destroys no existing value to make a place for itself, but occupies the land under the street, which is, up to this time, absolutely unutilized and unproductive.

The plans of the company are as complete and perfect as engineering skill can make them, with the exception that the original charter gives a width of only 35 feet. The sooner the Company is granted the privilege of building to the curb line—placing all pipes and wires underneath, instead of at the side, and giving the people real rapid transit by a four-track road—the better it will be for all the important interests concerned.

New York Evening Post, Feb. 11, 1885.

The Rapid Transit Problem.

A very interesting table of figures has been compiled recently, showing the annual growth of passenger traffic in this city during the past thirty-two years. From less than seven millions, in 1853, the total number of passengers carried upon all railway and omnibus lines had arisen, in 1884, to over 302,000,000. Here is an average increase of over nine millions a year. The population of the city during that period has a little more than doubled, being 515,000 in 1850, and 1,200,000 in 1880, while the passenger traffic was 43 times greater in 1884 than it was in 1853. Taken by decades the growth in passenger traffic has averaged 41 per cent., and the growth in population 46 per cent., a ratio of over three to one. During the seven years in which the elevated railways have been in operation the increase in travel has been very great. The total number of passengers carried on all railway lines, and not including omnibuses, in 1877 was not quite 164,000,000. In 1884 it was 284,000,000, an increase of 120,000,000.

The full significance of this remarkable growth is understood only when it is taken in connection with the travel on the elevated railways. This travel is about one-third of the whole amount, and in 1884 it was a little less than 97,000,000, or 23,000,000 less than the growth since 1877. In fact, the growth between 1883 and 1884 was nearly 16,000,000. These figures explain in a great measure the crowded condition of the elevated cars during the busy hours of morning and evening. They show that instead of being solved by the elevated railway system the rapid transit problem is

still with us. The elevated roads are more and more inadequate every day to meet the demands upon them. Every person who travels upon them knows that between eight and ten o'clock in the morning and between four and seven in the evening it is with extreme difficulty that a seat can be found after a few stations have been passed. The managers of the companies admitted this fact a few years ago when they put straps in their cars for unseated passengers to cling to. Mr. Cyrus Field was so delighted with this addition to the comforts of the roads that he announced it in advance, and then awaited with confidence the outburst of popular gratitude, which he was sure would be forthcoming. But the public was, as usual, ungrateful, and though it is obliged to use the straps more and more each week, it cannot be said that the growing demands of travel are completely met by them. The fact is that these roads have greatly stimulated travel all along their lines, as, of course, they were bound to do. Stations far up on the road toward Harlem, which a few years ago were almost deserted, are now crowded morning and evening, and instead of finding empty trains to board, the down traveller from these points now is obliged to allow train after train to go past in the busy morning hours before one comes along in which he can find a seat.

Below Fiftieth street it is extremely difficult to find a seat on the down trains of any of the principal elevated lines in the morning, and the difficulty increases every week. In stormy weather, when all the pedestrians are forced to ride, the crush is not only uncomfortable, but must be a severe strain to the strength of the structures.

These evidences of inadequacy, which everybody sees daily, are explained by the official figures. The growth in travel during these seven years in which the elevated roads have been running *exceeds their capacity by 23,000,000*. And this growth is certain to continue, while their capacity cannot be enlarged. The ratio of increase of the last seven years would give us in 1890 a total passenger traffic of over 422,000,000, and ten years later this would be nearly or quite doubled. How is this demand to be met? Not by the present elevated railway system, for that is strained to its utmost capacity now. Then, too, the question of wear and tear with these iron structures is a serious one, and will have to be seriously considered very soon. Ten years more may render the Third avenue and Sixth avenue lines unfit for use, when they will have to be rebuilt, or some

other system of travel substituted. We can detect on the part of capitalists now no disposition to build more roads of this kind. The probability is, therefore, that until some other system is constructed the present elevated roads will have to meet the demands of traffic as well as they can. When relief does come it will in all probability be in another and more enduring form.

At best the elevated roads were merely a temporary solution of the transit problem. They have never been able to supply us with one of the pressing needs of the city—that is, a quick and direct passage from the lower to the upper part. We have never had a direct connection between the lower part of the city, and the Grand Central Depot. A man can get to the depot now by crossing one or two bridges or by taking a cross-town horse car, but he is able to get there almost as quickly by taking a street car for the entire distance. The need of the city is an underground or viaduct road four tracks in width. Two tracks should be devoted to local trains and two to express trains making a stop at Forty-second street, and no others till Harlem is reached. Then we should have rapid transit in fact as well as in name, and it would be on a solid and enduring basis. It is entirely probable that such a system would not seriously impair the traffic of the elevated roads. Nine people out of ten thought that the elevated roads would ruin the street cars, but they have done nothing of the kind. The combined street railways carried twice as many passengers last year as the combined elevated roads, and one of them carried alone over 31,000,000. The greater the facilities for travel the greater will be the number of persons using them.

Commercial Advertiser, Dec. 17, 1885.

New York and Cable Railways.

New York is only at the beginning of its growth in population and commercial importance. Within the next quarter of a century it is apparently destined to rival even London as a great capital, and however well cable railways may serve little towns like San Francisco, this great metropolis has need of a much better system of communication between its widely separated parts. It has need also of its streets, and cannot afford to give them up for speculators to obstruct at will.

New York Tribune, Jan. 8, 1884.

According to the vital statistics of the Board of Health the population of this city has increased ten per cent. in three years, and is now 1,350,000. Another indication of the rapid growth in population is found in the traffic returns of the street railways. In 1880 the horse railways carried 148,968,369 passengers, and the elevated roads 60,831,757. In 1883 the surface roads carried 175,994,528 passengers and the elevated roads 92,124,443, a total of 268,118,971. The total increase in three years was over 58,000,000. For the five years, from 1875 to 1880, the total increase was 43,000,000. The number of passengers now carried by the surface roads exceeds the number carried by them before the elevated roads were built, and the same is true of the omnibuses. It is clear that the population of the city is growing rapidly; and it is equally clear that to accommodate this enormous growth of travel during certain hours of the day there must be provided further means of transportation. *Of course the travel increases in proportion to the facilities furnished.* There are some portions of the city, particularly on the West side, which are now very inadequately provided with means of transportation of any kind. When provision is made to meet that want no doubt millions of dollars' worth of property now lying unimproved will be built upon, and thus much will be added to its taxable value.

New York Evening Telegram, April 3, 1885.

Freight Transportation in the City.

A great drawback to New York, which becomes more and more pressing as the city grows and our commerce increases, *is the lack of adequate facilities for the transportation of freight* between the railroads and the wharves of sea-going vessels. The present system of carrying freight to the lower part of the city—by steam power through the streets—is not only very slow and unsatisfactory in itself, but by monopolizing certain thoroughfares, it constitutes a grave hindrance to local business and traffic, and a serious danger to life and property.

A commission has been constituted by the West Side Protective Association to study the evil and a possible remedy. One of the recommendations of this commission is admirable—namely, that a tunnel for freight only should be constructed from a central freight station on the upper part of the island, leading to the

St. John's Park Station, and with branches along both river fronts.

The great advantage of such a scheme to commerce is obvious. If carried out it cannot but prove a powerful factor in increasing the prosperity of the metropolis.

Record and Guide, May 23, 1885.

Sundry Broadway property holders are still energetically protesting against the proposed Arcade road, *yet it is as certain as any sum in arithmetic that steam under Broadway would double, if not treble the renting value of every building it directly affected between the Battery and Union square.*

Our Prophetic Department.

BROOKLYNITE—But what great improvements will, in the meantime, add to the importance of New York proper?

SIR O.—The Hudson River tunnel, upon which work will soon be resumed, and another and longer tunnel, which will enter the city at the Battery and make use of the Broadway Arcade road, which will be the passenger terminus of all the railway systems of the country.

BROOKLYNITE—You believe in the Arcade railway then?

SIR O.—I believe it is the most desirable public work ever proposed for the benefit of New York. It would prodigiously increase the commercial importance of the city, and be an unmixed benefit to real estate.

New York Journal Commerce, Oct. 19, 1882.

The destiny of this city is to rival London and Paris in beauty as well as size. This end can never be attained while hideous frameworks of iron disfigure nearly all the principal avenues. Such things may be tolerated in small places, but not in the metropolis of America. Here, as in London, the growth of the city, the increase of population, the demands of business, the safety, comfort and convenience of the public will at last require the underground lines as the only means of rapid transit suitable for a city of the first rank. There is no known reason why such roads cannot be as easily and as cheaply constructed in New York as in London, and prove as satisfactory to the people who use them, and as profitable to their owners.

N. Y. Commercial Advertiser, May 28, 1885.

The Arcade Railway.

New York imperatively needs an underground or Arcade railway. The elevated railroads are not only unsightly structures, but they have distinctly failed to furnish the rapid transit that this city requires. The transit they give is not rapid enough, and there is not nearly enough of it. The circumstances of the case do not permit them to run trains at a proper rate of speed, and the geographical peculiarities of the city do not lend themselves to a sufficient multiplication of such lines to meet the demands of the public.

The exigencies of the situation seem to be met by the proposed Broadway Arcade Railroad plan. We need a quadruple railroad, underground, from the Battery to Harlem, on which express trains can be run through without stoppage—thereby bringing the upper wards within easy and rapid communication with the business region, and so enlarging the practically habitable part of the city—and on which, without interference with express trains, way trains can be run at a high rate of speed and in rapid succession. In a word, *the plan of the Arcade Railway* is admirably adapted to the circumstances of the case, and *no other plan* that has every been suggested is.

New York Record and Guide, Nov. 24, 1885.

MR. K.—What other improvements do you see ahead?

SIR ORACLE.—The greatest of all I have yet to mention. It is the creation of a new street under Broadway, from the Battery up to Union square, connecting with two branches, one in the direction of the Grand Central Depot and the other following the line of Broadway up to the Harlem River. This will not be a mere tunnel to convey passengers by steam but a veritable street wider than Broadway itself, with shops where there are now basements, well lighted by day and night and a favorite promenade for ladies and others, who will be protected from the fierce rays of the sun in summer and from the cold blasts of wind in winter, as well as from storms in all seasons. The centre of the street will be used for cars, not only for local passenger traffic, but for bringing freight directly to the stores where the goods are sold. *This Arcade road will be one of the wonders of the world. It will make Broadway really more valuable than Wall street property is to-day.*

New York Star, July 31, 1884.

Satisfactory Rapid Transit.

An article in the current issue of the *Sanitary Engineer*, revealing the many meritorious features of the Metropolitan Underground Railway in London, confirm and emphasizes the views heretofore expressed in these columns relative to the best solution of the rapid transit problem in our own city. It is interesting to note what has been recently accomplished.

The last completed section of this magnificent work, from the Mansion House to the Tower, a distance of about three-quarters of a mile, has been executed within the last twenty months, and runs "beneath residences, warehouses and roadways, and in all the difficult labors of undermining, propping and building there has not been a single accident." Enormous warehouses, containing iron safes and strong boxes, have been tunneled under without disturbing their contents, and the statue of King William, which, with its pedestal, weighs 179 tons, has been underpinned and rests on an arch of the tunnel. Large trees have been undermined and underpinned without removal or injury. The result is that there is a substantial roadway on which the heaviest trains can run at high speed, and passengers can go from point to point in London without creeping at twelve miles an hour on a structure which sheds bolts and nuts and rivet-heads down on the heads of the passers-by and requires constant repairs, while the gas and smoke and noise offend the innocent dwellers alongside the line of travel.

While we are proposing various makeshifts in New York and Brooklyn—we may as well realize in time that they are only makeshifts—and that in the long run we must adopt the underground system, in the form of either tunnel or Arcade. The existing roads are inadequate to the traffic crowding upon them, and the people of the metropolis will sacrifice no more of their streets to such unsightly and obnoxious structures. The depressed-cable system is desirable only for comparatively short distances; it cannot furnish real rapid transit for a city of the shape and extent of New York. *We must in the long run have recourse to the underground plan, and the sooner we prepare for it the better.*

N. Y. Record and Guide, March 21, 1885.

If ever the Arcade road is built and it half fulfills the expectations of its promoters, there will

be a monument erected at sometime in honor of Melville C. Smith, who originally projected this splendid and far-reaching improvement. He has been at work at this matter for fifteen years, and the resources he has brought into play in carrying out his plan have been simply marvellous. Mr. Smith is gifted with wonderful power of statement, and any official or capitalist with whom he has personal conference is always finally convinced by his cogent arguments.

Brooklyn Daily Eagle, May 3, 1884.

Travel Within Cities.

The president of the Broadway Arcade Railroad Company has prepared some interesting statistic of travel within the City of New York during the last thirty years. In that time the population of the town has vastly increased, and we should expect to find that the number of passengers in cars and omnibuses had multiplied accordingly. The population in 1853 was about 550,000. In 1883 it was about 1,200,000 or more than twice as great. It would follow, estimating upon this increase of population, that nearly two and a half times as many persons rode in the public vehicles in the later as in the earlier year. But the proportion is enormously larger. The following shows how often each inhabitant rode in the cars in the year specified:

| | |
|--------------|------------|
| In 1853..... | 12 times. |
| In 1855..... | 31 times. |
| In 1860..... | 47 times. |
| In 1865..... | 83 times. |
| In 1870..... | 122 times. |
| In 1875..... | 155 times. |
| In 1880..... | 175 times. |
| In 1883..... | 215 times. |

In 1853, therefore, there were about 6,600,000 passengers. Allowing only for the increase in population there would have been in 1883 some 14,400,000 passengers. But there were in fact 268,000,000. *So then, instead of less than two and a half times as many riders, as there would have been according to population, there were over thirty-eight times as many. This shows that the ratio of travel within the city is not determined by the number of inhabitants. It is affected far more by the facilities for travel.* With more and better lines and cheaper fares the number of passengers will increase even if the population remain stationary. While every inhabitant of New York rode twelve times a year in 1853, he rode 215 times in 1883, or nearly eighteen times as often.

EARLY LEGISLATION, 1870, &c.

The Arcade has the endorsement of nearly every engineer in the State of New York and of others who have personally examined and made a study of the tunnel in London. One thing commendable in this bill is, that it is *not pushed by the regular lobbyists* who infest Albany year after year. Had such a railroad been constructed ten years ago, four hundred thousand people and hundreds of millions worth of property would have been saved to the State.—*New York Tribune*.

It gives a long-suffering New Yorker curious feelings to read that the city is at last likely to have a serviceable steam railroad. The Arcade Railroad bill seems now sure to pass; the project is an excellent one in every way, and the Legislature which gives us this road will be gratefully remembered by the people.

Our Albany correspondent gives an interesting account of the manner in which the project has been recommended to the Legislature. "In the Assembly it was moved into the Committee of the Whole by Mr. John H. Selkreg, of Tompkins, and managed by ex-Speaker Pitts. With such men to befriend it it is hardly necessary to add that it was read through, reported complete to the Assembly, and passed on the spot by one hundred and one ayes and one negative, Mr. J. L. Flagg. The next morning Mr. Flagg and six absentees rose in their seats and asked to be recorded in the affirmative, thus giving this road one hundred and eight votes, the greatest number ever given for a railroad bill in the Legislature. This popularity is owing to the fact that the managers, instead of the appliances, too common in such cases, introduced their measure under the auspices of such men as Senators Palmer and Parker, and Assemblymen Pitts, Selkreg, Younglove and La Bau, *men of the highest character in the Legislature*. It has been approved almost unanimously by the public press of the city and state, and has the sanction of the best engineers.—*Evening Post*.

The Arcade railroad, which passed the Assembly last week by an unprecedented unanimous vote—one hundred and nine—was fought through against the determined opposition of all the other city railroad schemes, and is the only bill which can pass the Legislature for the relief of New York. It has received the universal commendation of the press and public, with the exception of those interested in a surface road.

The examination of the scheme before the Senate committee lasted *three entire days*, and nearly every prominent engineer in the United States—among them William J. McAlpine, former State Engineer, Chas. Thurston, Nathaniel Cheney, Vice-President of the Agricultural Iron Works, J. N. Greene, Engineer of Lake Superior Ship Canal, and General Quimby, of the Rochester University—testified to the perfect feasibility of the plan.

Forty distinct plans for Broadway travel have been laid before the Legislature, but the Arcade, in our opinion, is the best for the city, for property owners, and for the public, and we fervently trust that the Senate, in their wisdom, will pass it. *When completed Broadway will become, indeed, the wonder of the world.*—*N. Y. Evening Mail.*

The Arcade has worked its own way; year after year the best men in the State have gradually gravitated towards it, until now it is the favored plan of some of the best engineers in the world. That it will become a law is certain, and when a law, some of the largest capitalists of New York pledge themselves that the work shall be at once commenced.—*New York Express.*

If ever a man deserved success to carry through a public project, it is Melville C. Smith, the *deus ex machina* of the Arcade Railway. It is certainly one of the most magnificent projects, both in a financial view and as a public convenience, that has ever commanded the attention of capitalists.—*N. Y. Dispatch.*

Of all the various schemes proposed, we see nothing which holds out any real promise so well as the New Broadway plan, officially known as the Arcade Railway. One feels as he studies this plan, a little like the fox described by Massinger, who, when first he saw the forest's king, the lion, found his breath nearly taken away, but at last became familiarized with the great creature, and began boldly to admire and frankly to criticise. For the Arcade Railway scheme proposes to attempt a big thing, which seems audacity itself at first, but which, studied more closely, begins to show itself quite as feasible as many a little thing.—*Galaxy.*

The Central Underground bill boasted A. T. Stewart, Judge Hilton, Senator Campbell, and one Brown, among the most valiant defenders. *The Arcade bill was defended by*

an army of engineers, builders, architects, journalists and others, an array of practical talent such as Albany has never seen gathered upon a single bill.—*N. Y. Citizen.*

The bill for the Arcade Underground Railway was taken up and passed on Friday night by a vote of 101 to 1. On the next day J. L. Flagg, of Troy, who had voted in the negative, changed his vote, and seven other delegates were recorded in the affirmative. *The Arcade plan has thus the proud and distinctive honor of having passed in a full house without a dissenting vote.*

The victory is the more marked, because this corporation is by no means the richest of those who have applied for charters, and has never been charged with attempting to use unlawful means in securing its end. *Without the aid of a lobby*, but with faith and enthusiasm that has been most marked, its projectors have carried out their purpose as proclaimed from the start, of passing the bill on its merits.—*Rochester Democrat.*

Most of the leading papers are strongly in favor of the Arcade. Hon. Melville C. Smith, the author of the plan, is urging the thing with great energy and persistence, and it seems as if he must succeed. It is by far the best, if not the only plan worth naming.—*American Baptist.*

The Arcade Railway is a public benefaction of national interest. Nothing of a temporizing nature will answer. *Whatever is done should include within its scope the sweep of centuries and afford means of freight and transportation facilities for passenger travel for all time to come.*—*Albany Evening Journal.*

The Arcade road failed in the State Senate, and more's the pity. It was an original and splendid scheme, one worthy of the great metropolis, and which would have beautified our noble city. But the wealthy owners of property on Broadway defeated it by their money.—*Real Estate Record.*

The entire objection against the plan comes from a few very wealthy property owners, who do not deny the enormous benefits to the city and the public, but fancy that they foresee some damage to their own private property. This offset of limited private interests against the needs and demands of the entire population of the city, is thus a *struggle between the millionaires and the million.*—*N. Y. World.*

A very convincing and complete argument was made by Hon. M. C. Smith, and the bill will probably be shortly reported by the Railway Committees of both houses. The Arcade plan is recommended by some of the first engineers of the country. It comes here with the prestige of having *no taint of corruption* upon it, and of being supported and urged by men in both houses, concerning whom no suspicion of improper motives would be entertained.—*N. Y. World*.

This is probably the most thoroughly comprehensive and excellent of any of the various plans that have been suggested, for while it provides the most abundant means for rapid passenger transit and relief of the streets, it does not block up any part of the city, but, on the contrary, adds enormously to the available street space. In short, this contemplates nothing less than the addition to the city of an immense avenue which is to traverse the heart of the metropolis, increasing its wonderful attractions, augmenting the value of its property, and giving to the people the great boon of sure, rapid and cheap communication.—*N. Y. Scientific American*.

Various plans for securing what the public demand have been offered, and, for valid reasons, objected to. An ordinary subterranean railroad would be gloomy and in every respect unattractive, being of necessity imperfectly lighted and ventilated.—*N. Y. Scientific American*.

The growth of the city, the value of property, low rents for the poor man, elegant and accessible suburbs for the rich, the comfort of the people, and the present wretched system of city transit, all unite to make this improvement imperative.

Among all the plans for accomplishing this result the Arcade plan is the best before the Legislature. It has been very fully discussed and its merits and demerits pointed out. A proper estimate of these results is a strong preponderance in favor of the road. It meets opposition from a few Broadway property owners, but has received the support of the great majority of the owners, and of the people at large. It is not opposed in the interest of the people; their interests demand its construction. The men who oppose it have never done anything for the people, but grow rich out of them. They confine their views to their own interests as property owners, and, as that class generally do, take a narrow and false

view at that, whereas the construction of this road, by concentrating travel on Broadway and then multiplying many-fold its capacity, will do more than anything else to double the value of property on Broadway. It is not their question; *it is the people's question*; and the people at large who have the right of transit through Broadway, and thereby make the property owners rich, *demand the road*.—*N. Y. World*.

There is no necessity for cumulative reasoning in the question between the Arcade and tunnel ideas. The whole matter is summed up in the fact that *the former is adequate, convenient, valuable and thoroughly practicable, per se*; while the latter is *only relatively valuable in the absence of the former*. * * *

These data are of great value in determining the practicability of the tunnel theory in this city, and point to the conclusion that it must be ranked as valuable only for want of something better—in a word, that it may be better than nothing, but is by no means what is wanted, and by no means answers the purpose fully. * * * * * The whole engineering talent of the city, with little exception, *opposes the tunnel plan*; and as capitalists in these matters rely mostly on the opinions of engineers, it seems scarcely probable that the stock will ever be taken.—*New York Herald*.

This is emphatically a want of the people. It will confer incalculable benefit upon the masses, the workingmen who cannot afford either to pay for comfortable homes in the heart of the city, or to live in remote places which it needs an hour or two of their precious time to reach. These are the people who clamor most loudly for an underground road as the only means by which quick and sure communication can be established between the city and the rural districts. These are the people who will be most injured if such projects are defeated; and these are the people whose wants and interests our legislators are bound especially to consider. We can understand why this road or that road may be obnoxious to this or to that citizen. One man fears that his front door may be obstructed while the road is building. Another trembles for the safety of his cellar, &c., &c. So Albany is filled with paid lobby agents, and a *handful of millionaires* bid fair to defeat the wishes of the great mass of the people.—*N. Y. Tribune*.

The plan known as the Arcade Railway has been before the last two Legislatures, and, although it was generally denounced at first as visionary, there is no concealing the fact that it has constantly grown in popular favor, and to-day commands a larger share of public confidence than any other scheme for an underground railroad in this city ever offered to the public. Its entire practicability is vouched for, after full examination by the first engineers in the country, including Hon. Wm. J. Alpine, General E. L. Viele, General C. B. Stuart, General George B. McClellan, General I. F. Quimby, and many others. It has received the endorsement of the New York Produce Exchange, of the American Institute, and of a large proportion of the leading merchants and capitalists of this city—men like Commodore Vanderbilt, Peter Cooper, H. B. Claflin, George Opdyke, E. S. Brown, W. T. Coleman, and others of this class. It is, moreover, an American invention—entirely unlike any English or other foreign underground roads—and could readily command American capital to build it, which no other scheme for an underground road in this city has hitherto been able to do.—*New York Times*.

The Arcade plan is good—it is feasible—it is grand. It will, if carried out, help to make New York the wonder of the world.

The bill passed the Senate and Assembly by an unusual majority; so large that no question can be raised as to the favorable opinion of the members of the Legislature. The testimony of the first engineers of the country, the request for its passage by thousands of property-holders on Broadway, the demand for such relief for Broadway as this will bring, gave the measure extraordinary features of recommendation.

Since its passage, and while waiting for the Governor to sign or veto, Belmont, Stewart, and the Trinity Church property trustees declare the bill shall not become a law. Inasmuch as it is presumptuous for the people to move without the consent of millionaires, it may be well enough to call a special session of the Legislature and give all the affairs of State into the hands of those who never earned a dollar or gave employment to a person—man, woman, or child—except for their own pleasure and political or financial aggrandizement.—*New York Democrat*.

A strong pressure will be brought to bear upon Governor Hoffman to induce him to veto the Arcade Railway bill, which passed the Leg-

islature by such a handsome majority. Already property owners along Broadway have held a meeting to that end, which is said to have represented one hundred millions of dollars' worth of property. That is a considerable sum of money to stake against the interest of the people, and we should not be surprised if a dollar was found to be of more weight in the Executive Chamber than a ballot. Not that Governor Hoffman is to be bought off from signing this bill; but that the interests of certain property-holders, and the influence they can command, will overstop and overpower the interests of the people who, through their representatives, have voted for the bill.—*Globe*.

The Arcade Railroad plan under Broadway, aside from its boldness of design, its ultimate success as a work of skilful engineering, and its final crowning success to the capitalists as a profitable and permanent investment, especially recommends itself to the working classes. Will our Chief State Executive bear in mind that while a score of old fogies, representing, as they say, \$350,000,000 capital, are opposing the road for no sound or tangible reasons, either expressed or implied, that 500,000 *working people* demand the sanction to the measure and the construction of the road? Also, that the said 500,000 working people, at \$1,000 per head (which was a fair valuation for *slaves* before the war), represent \$500,000,000 capital, and can control 100,000 votes?—*National Workman*.

Does Governor Hoffman propose to deprive the people of New York and of Westchester county of the means of rapid transit now within their reach, because a few omnibus owners and Broadway millionaires are determined that things shall remain as they are? Of what consequence is it whether these gentlemen represent one million or one hundred millions of property, so long as in this matter they represent only themselves, and are in direct opposition to the interests and wishes of the great body of the people? Is there any doubt that *ninety-nine in a hundred* of our citizens are in favor of any practicable plan for rapid transit? The project for the railroad under Broadway which is provided for in the Arcade bill has stood the test of a three years' campaign at Albany. It has been subjected to every possible criticism, and has triumphantly answered all objections. Unable to argue longer against it, its enemies are now endeavoring to frighten the Governor from signing the bill granting it a charter. * * * * *

The Governor must understand the responsibility he assumes if he refuses to sign this bill. It was passed by a vote of more than two-thirds of the members of the Legislature, in answer to a great popular demand, and after a most thorough investigation and discussion in committee and in the two Houses. It is a wise, sound and honest bill. *It promises a greater benefit to this city than any measure that has passed the Legislature since the act which authorized the building of the Croton Aqueduct. It will be a blessing to all, the rich as well as the poor; and if a few rich men now defeat it, they will harm themselves much, but they will harm the great public more.* Let us see whether the Governor has the wisdom to serve the many, or the weakness to bow to the dictation of a few.—*New York Sun.*

The Governor ought to sign this bill. * * * It is not strange that an opposition should spring up to this plan of relief, nor that the opponents should be the men who will reap the largest benefit from it if it be carried out. *Conceding* to these property owners, who visit Albany in such strong force to-day, that they are correct in arguing that the construction of the Arcade road will damage their property interests, there is still no reason for the Governor to veto the bill. It is in the very nature of the thing that public improvements involve a sacrifice of private interests. There is not a railroad in the State that did not, at the outset, encounter just *this sort of united opposition* from the property owners. There is not a landowner who did not cry out against the destruction of his property, and refuse to believe, what every one now sees, that it would *increase its value ten fold.* It was men of the same wealthy class that made so vigorous an opposition to the Hudson River Railroad, which had no other purpose, so far as they were concerned, than to turn their useless acres into villa sites worth tens of thousands of dollars. These men have no sense of public interest, nor care for the growth of the city; they do not see beyond the boundaries of their own corner lots, and they join the monotonous procession who exert all their force in holding back the horses. They should adopt this as their motto: Progression checked and retrogression encouraged.

* * * * *

For the sake of the greater rental they voluntarily undergo the destruction of an old building, the great outlay of capital in building a new one, and the loss of a year's rent. They

confess the advantage of these progressive changes; and a second thought, of the kind that leads men to the apprehension of the obvious, would show them that they can do no more profitable thing than *consent* to the interruption occasioned by the construction of the Arcade road. But this class of men never did such a thing voluntarily. They have to be sweetly forced to their own profit. * * *

Whatever increases this travel and the settlement of this sort of population will benefit Broadway. It is just as possible now to double values there as it is certain that they have been doubled there within the past ten years; and *the Arcade road will do it.* * * *

The Central Underground has been two years incorporated. It has had to struggle with a poor route and a defective plan. It has made no progress in the public confidence; that is, in procuring subscriptions. Capital rejects it. It should not be allowed to block the way of the Arcade. *The Arcade has the merits of the best route and the best plan, and the public interests, including the true interests of the men who oppose it,* require the Governor to sign this bill.—*The N. Y. World.*

The reasons assigned by Gov. Hoffman for not assenting to the Arcade Railway bill, though specious and specific, are not well founded nor honestly urged. The Governor's objections are not such as will commend themselves to the people of this city. Having made up his mind to defeat this purpose on behalf of our overcrowded streets, he assigns for it the reasons which come to him—not as a reason, but an afterthought. But how is the Governor to answer to the people of New York for denying them the relief they so urgently demand? In obedience to a few property owners he has dwarfed the great city of proportions and defeated the most feasible scheme for building up the neighboring counties in this State, while his action assures to New Jersey a large part of our overflowing population. *It passed a Democratic Senate and a Democratic Assembly by large majorities, and was sent to a Democratic Governor for his sanction. It passed because its passage was imperatively demanded.* With Gov. Hoffman rests the responsibility of the failure of a million of people to travel through New York as rapidly as they could travel through London.—*New York Standard.*

Gov. Hoffman has sent to the Secretary of State, without his approval, the act authorizing the construction of the Broadway Arcade Railroad. His principal objection seems to be that

nothing is required to be paid into the city treasury in return for the privileges which the bill professes to confer upon the railroad company. Considering that all the citizens and property holders in the city would be immensely benefited by it, this objection would seem to be much more captious than solid. The Governor might better have contented himself with refusing to sign the bill, and not have argued the question at all.

The simple truth is, that Gov. Hoffman has succumbed to the pressure brought to bear upon him by some of the millionaires who own real estate on Broadway, and who fear that the Arcade Railroad may possibly diminish its value. *He has taken the side of the rich against the poor; of the capitalist against the laboring classes; of the aristocrats against the people.* He has turned a deaf ear to the cry of the toiling thousands who demand cheap and rapid transportation between the upper and the lower part of the city, and listened only to the appeals of gentlemen with heavy bank accounts.—*New York Sun.*

Governor Hoffman has sent the Arcade Railroad bill to the office of the Secretary of State without his signature. We do not propose to review his reasons. An attempt to answer or confute them would be as absurd, at this stage of the question, as for the defeated counsel in a lawsuit to offer to re-argue the case after the judge had pronounced his decision. We have given expression to the public sense, and have advocated the Arcade Railroad because it seemed the most feasible and promising method of reaching the desired result. The reasons which convinced us were indorsed by a strong body of public opinion, and by a large majority of both branches of the Legislature.

The Governor's objections are to be regarded merely as reasons for framing a new bill to accomplish the same object. We hope the next Legislature will pass a bill authorizing the construction of the Arcade railroad.

We trust that the veto merely postpones this great work for another year.—*The N. Y. World.*

PASSENGER TRAFFIC

OF

NEW YORK CITY.

The following table of official figures exhibits the Lines of Railways and Passenger Traffic in New York City, from the year 1853 to 1886, as related to growth of population.

| | Population. | Railways. | | Passenger Traffic. |
|------|-------------|-----------|------|--------------------|
| 1850 | 515,547 | 2 | 1853 | 6,835,548 |
| | | | 1854 | 6,817,197 |
| 1855 | 629,810 | 4 | 1855 | 18,488,459 |
| | | | 1856 | 23,153,050 |
| | | | 1857 | 22,190,431 |
| | | | 1858 | 27,900,388 |
| | | | 1859 | 32,888,794 |
| 1860 | 813,669 | 6 | 1860 | 36,455,242 |
| | | | 1861 | 26,274,360 |
| | | | 1862 | 35,878,044 |
| | | | 1863 | 40,412,357 |
| | | | 1864 | 60,900,200 |
| 1865 | 726,386 | 12 | 1865 | 82,054,516 |
| | | | 1866 | 88,953,016 |
| | | | 1867 | 100,541,562 |
| | | | 1868 | 105,816,695 |
| | | | 1869 | 114,349,123 |
| 1870 | 942,292 | 12 | 1870 | 115,139,553 |
| | | | 1871 | 133,893,981 |
| | | | 1872 | 143,696,989 |
| | | | 1873 | 145,358,805 |
| | | | 1874 | 151,927,233 |
| 1875 | 1,045,223 | 19 | 1875 | 166,918,173 |
| | | | 1876 | 168,413,971 |
| | | | 1877 | 163,936,298 |
| | | | 1878 | 170,189,502 |
| | | | 1879 | 187,983,792 |
| 1880 | 1,206,299 | 23 | 1880 | 211,222,348 |
| | | | 1881 | 231,386,771 |
| | | | 1882 | 252,871,646 |
| 1883 | | 23 | 1883 | 268,749,877 |
| 1884 | | 23 | 1884 | 284,115,862 |
| 1885 | | 25 | 1885 | 297,116,690 |

**THE OFFICIAL FIGURES IN DETAIL OF PASSENGER TRAFFIC
FOR 1885.**

| Name of Road. | Number of Passengers. | | | | | | |
|--|-----------------------|--|--|--|--|--|--|
| Broadway & 7th Avenue, - - - - - | 21,952,529 | | | | | | |
| Central Cross Town - - - - - | 3,666,617 | | | | | | |
| Central Park, N. & E. Rivers, - - - - - | 15,066,770 | | | | | | |
| Christopher & 10th Streets, - - - - - | 4,316,777 | | | | | | |
| Dry Dock, East Broadway & Battery, - - - - - | 17,419,852 | | | | | | |
| Eighth Avenue, - - - - - | 13,664,391 | | | | | | |
| 42d & Grand Street Ferry, - - - - - | 8,208,552 | | | | | | |
| Harlem Bridge, M. & F., - - - - - | 3,296,738 | | | | | | |
| Houston, West Street & Pavonia Ferry, - - - - - | 4,352,704 | | | | | | |
| New York & Harlem, - - - - - | 15,972,361 | | | | | | |
| Ninth Avenue, - - - - - | 4,175,580 | | | | | | |
| Second Avenue, - - - - - | 19,367,370 | | | | | | |
| Sixth Avenue, - - - - - | 16,998,137 | | | | | | |
| South Ferry, (returns of 1884) - - - - - | 546,851 | | | | | | |
| Third Avenue, - - - - - | 32,000,000 | | | | | | |
| 23d Street, - - - - - | 10,311,145 | | | | | | |
| Manhattan Elevated, - - - - - | 103,354,729 | | | | | | |
| 42d Street & St. Nicholas Avenue, - - - - - | 2,445,587 | | | | | | |
| | <hr/> | | | | | | |
| | 297,116,690 | | | | | | |
| Adding 3 Omnibus Lines, 9 months, - - - - - | 13,500,000 | | | | | | |
| | <hr/> | | | | | | |
| Produces a total passenger traffic for 1885, - - - - - | 310,616,690 | | | | | | |

INCREASE OF PASSENGER TRAFFIC FOR EIGHT YEARS.

| | |
|---|-------------|
| Total number of passengers carried, exclusive of omnibuses, 1885, | 297,116,690 |
| “ “ “ “ “ 1877, | 163,936,298 |
| | <hr/> |
| Increase in 8 years, - - - - - | 133,180,392 |

The above figures show that the natural growth of passenger travel for the 8 years, exceeds the total traffic of all the elevated roads by - - - - - 29,825,663

It will be seen by the above table that in the year 1885 the Third Avenue Horse Railroad carried over 32 million persons.

| | |
|--|-------------|
| That five horse car lines carried - - - - - | 107,737,888 |
| That four elevated railroads carried - - - - - | 103,354,729 |
| | <hr/> |
| Excess of five surface roads over four elevated roads, - | 4,383,159 |

INCREASE OF TRAFFIC, COMPARED WITH GROWTH OF POPULATION,
AND ESTIMATES FOR THE FUTURE, BASED UPON THE SAME :

The increase of Population during the present century has averaged $46\frac{7}{10}$ per cent. per decade, and passenger traffic during 20 years past has increased $141\frac{4}{5}$ per cent. per decade, or as $31\frac{2}{5}$ for Passenger traffic to 1 for Population; upon this basis the traffic in 1890 would be - - - - - 509,045,858
1900 " - - - - - 1,226,800,517

Selecting as a basis of calculation the semi-decade from 1875 to 1880 (remarkable for great financial depression), showing the lowest percentage of increase of travel, viz. : as 15 of population to 27 of Traffic, or approximately, 2 of Traffic to 1 of Population, the passenger traffic in 1890 would be - - - 422,444,696
1900 " - - - 844,889,392

It will be seen that, at the lowest estimate, provision will have to be made for an increase of traffic within six years, or in 1890, of - - - - - 138,328,834
and 16 years hence, or in 1900, of - - - - - 560,973,530

ADDITIONAL ACCOMMODATIONS INVARIABLY PRODUCE GREATLY
INCREASED RATIO OF TRAVEL.

The following table shows the number of railways in operation and average number of passengers carried yearly by each, and demonstrates that increase of travel is stimulated and in a large degree governed by the additional accommodations furnished.

| Railways. | | | | Passengers. | |
|-----------|----|----------|-------|-------------|------------------|
| In 1855 | 4 | carried, | each, | 4,622,114 | total 18,488,459 |
| " 1860 | 6 | " | " | 6,075,873 | " 36,455,242 |
| " 1865 | 12 | " | " | 6,837,876 | " 82,054,516 |
| " 1875 | 19 | " | " | 8,785,167 | " 166,918,173 |
| " 1884 | 23 | " | " | 12,352,863 | " 284,115,862 |

At no time in the history of passenger traffic of the City have the accommodations been sufficient, and invariably the construction of additional railways has been followed by a remarkable increase in passenger travel. The need for additional transit facilities was never before as urgent as now, and with a continuous yearly increase of more than twenty millions constantly swelling the demand, it is evident that additional provisions to meet this necessity must immediately be made.

JANUARY, 1886.





